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FLEET OWNER

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DETROIT

VOLUME 18
NUMBER 4

DEVOTED to the BETTER OPERATION and MAINTENANCE of all AUTOMOTIVE FLEETS

First Copy

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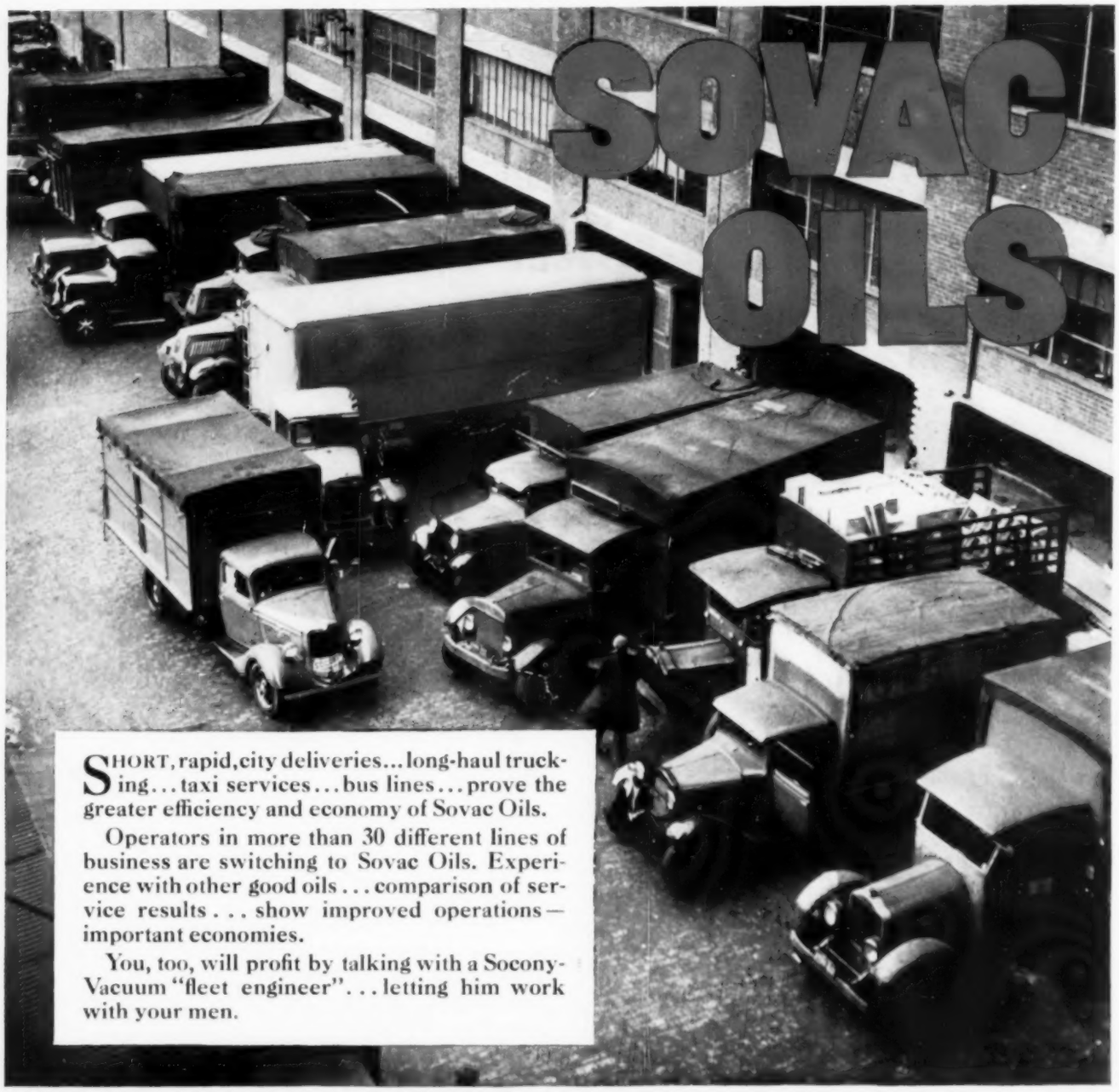
APRIL
1937

30 FIELDS

EACH WITH WIDELY DIFFERENT HAULAGE PROBLEMS, STEP UP THE EFFICIENCY OF FLEET OPERATIONS WITH...



SHORT, rapid, city deliveries... long-haul trucking... taxi services... bus lines... prove the greater efficiency and economy of Sovac Oils.

Operators in more than 30 different lines of business are switching to Sovac Oils. Experience with other good oils... comparison of service results... show improved operations—important economies.

You, too, will profit by talking with a Socony-Vacuum "fleet engineer"... letting him work with your men.

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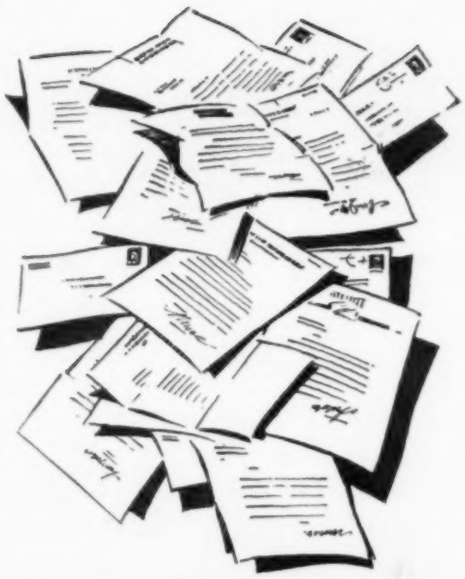

FLEET OWNERS

WHO WATCH THEIR TRUCKING COSTS SAY:

"FORD ENGINE AND PARTS EXCHANGE PLAN CUTS MAINTENANCE EXPENSE"

RECONDITIONED PARTS AVAILABLE AT LOW COST

Carburetor Assemblies	Distributor Assemblies
Fuel Pump Assemblies	Clutch Pressure Plate Assemblies
Generator Assemblies	Clutch Disc Assemblies
Generator Armatures	Brake Shoe Assemblies

Shock Absorbers for Commercial Cars Only

Low gas and oil costs are only a part of Ford V-8 Truck and Commercial Car economy. Maintenance expense is also low because sound design, quality materials and precision manufacture make trips to the repair shop few and far between.

When parts replacements do become necessary, the cost is small. For example, after tens of thousands of miles of service the V-8 engine can be exchanged for a factory-reconditioned engine at a cost much lower than an ordinary engine overhaul. This exchange can be made in just a few hours, reducing the idle time of the unit. This plan restores original performance and greatly lengthens the useful life of the entire vehicle. In addition to the engine, many other factory-reconditioned parts are available at low cost.

Before you buy any new truck this year, ask your Ford dealer for details about this money-saving plan. Set a date for an "on-the-job" test of a Ford V-8 Truck or Commercial Car under your own operating conditions.

Ford

Convenient, economical terms through the Authorized Ford Finance Plans of the Universal Credit Company

FORD V-8 TRUCKS *and commercial cars*

Ruckstell-Equipped Truck Crossing Quinault River on Olympic Peninsula, Oregon, with 5,000 board feet log.

Stiffer than any proving ground test

Only a few miles, but *terrible* miles, for *any* kind of transportation equipment. *Unspeakable* roads, *maximum* loads, to get prime timber down to the mills on time. Careful loading and trucking—*all important*. What a test for Eaton Ruckstell 2-Speed Axles! Yet hundreds of Ruckstell-equipped trucks are in use today in gruelling logging operations—giving satisfaction far beyond the hopes of the users.

But you don't have to be in the logging business to get your money's worth from a Ruckstell-equipped truck

The sturdy Ruckstell 2-Speed Axle saves time, gas, oil, and repair bills in most *any* kind of trucking business. It gives any truck a wider range of operation. Starts heavy loads without bucking, frogging, or damaging shock to driving parts. Gives more profitable speed on level roads. Better performance on hills. Prolongs engine life by reducing number of revolutions. And all because it provides properly spaced gear ratios for every road and load condition. • For more profitable performance be sure your next truck is Ruckstell-equipped—built for every make and type of truck—from 1½ ton capacity and up. Interesting booklet sent free.

EATON MANUFACTURING CO. • CLEVELAND, OHIO

Ruckstell 2-Speed Axles for Greater Economy in

Freight Hauling • Construction Work
Suburban Deliveries
Passenger Busses • Farm Trucking
Gas and Oil Delivery
Wholesale Food and Beverage Delivery

8 SPEEDS FORWARD —AND 2 REVERSE

EATON 2 Ruckstell SPEED AXLE

Wear ...THAT'S THE TEST

TEXACO FIRE-CHIEF GASOLINE helps your trucks to develop all of the power built into them. Fire-Chief's lightning action assures quick starts, rapid acceleration, full power in hill climbing.

JUST how often you need to put your vehicles in the shop for engine overhaul is the real test of a motor oil.

Immediately you put your fleet on New Texaco Motor Oil, you can expect greater mileage between overhauls.

New Texaco Motor Oil is cleansed . . . purified . . . by the Furfural Process. Furfural is a farm product made from oats, corn, wheat, cotton seed, sugar cane, etc.

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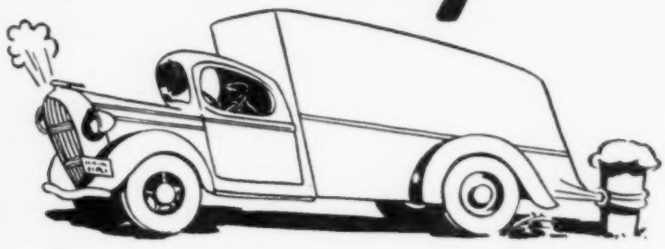
Trained lubrication engineers are available for consultation on the selection and application of Texaco Petroleum Products. Prompt deliveries assured through 2020 warehouse plants throughout the United States.

THE TEXAS COMPANY
135 East 42nd Street · New York City

TEXACO *TRUCK* LUBRICANTS

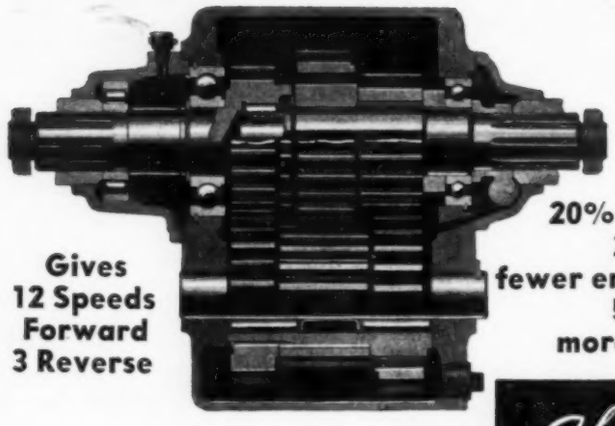
"You need more gears Buddy"



Don't BLAME YOUR TRUCK Simply FILL THE GAPS BETWEEN YOUR GEARS with WATSON-BROWN-LIPE

Your engine probably has all the power you need, but it can't perform with only 4 speeds as well as it could with more. Don't you find you could use different gear ratios to advantage every day, if you had them? Watson-Brown-Lipe Auxiliary Transmissions give them to you; one lower gear, one higher, and two more speeds between each regular gear. You can use your engine power to better advantage. You'll get more power, faster trips, lower gasoline bills, less oil consumption, reduced operating costs, less wear and tear, longer truck life, better performance, more earnings and more profit.

Send for this **BULLETIN**



Gives 12 Speeds Forward 3 Reverse

20% less Fuel
23% fewer engine r.p.m's.
52% more power

This PIECE OF EQUIPMENT WILL **MAKE YOU MONEY**

ASK THE NEAREST DEALER

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Billings, Mont., Hines Motor Supply Co.
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Kansas City, Mo., Cons. Body & Trailer Co.
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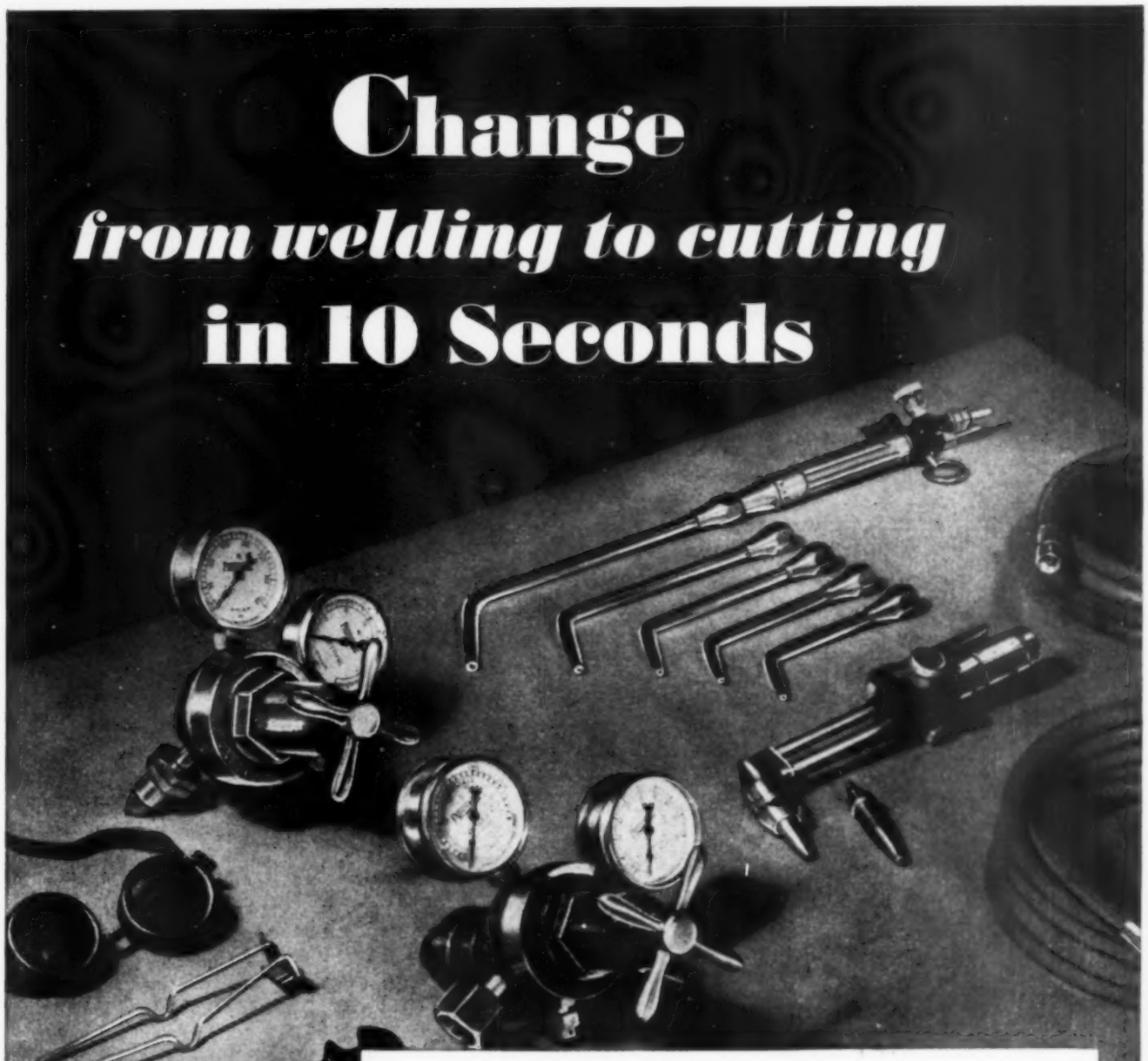
Change
from welding to cutting
in 10 Seconds



The Prest-O-Weld *Combination* Oxy-Acetylene Welding and Cutting Outfit

Ask your Prest-O-Weld jobber to show you how the Detachable Valve Body actually makes possible a change from welding to cutting in 10 seconds. Let him tell you, also, how much money you will save by buying this outfit for general duty welding and for cutting up to 2 inches.

Outfit complete $96.00

Prices slightly higher west of the Rocky Mountains

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

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PREST-O-WELD

WELDING AND CUTTING APPARATUS

PRODUCT OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

A RUGGED PRODUCT-FOR A RUGGED JOB

FOR DURABILITY and BEAUTY-

WE CHALLENGE

Larcoloid Leads

1. Acid and alkali resisting.
2. Dries hard in one hour.
3. Out of tack in 30 minutes.
4. Has adhesion second to none.
5. More durable than lacquer.
6. Easily sprayed or brushed.
7. Leaves no brush marks.
8. Safe! Contains no gun cotton.
9. Has high insulating quality.
10. 37 colors and black and white.
11. Applied on any clean surface.
12. No trick thinner needed.
13. Not affected by alcohol.
14. Clear Larcoloid will not print.
15. Does not raise undercoats.

THE tank trucks pictured above are part of a big fleet that operates from Maine to So. Carolina. They haul Bunker Oil one way and Gasoline the other. After unloading the oil it is necessary to clean the tanks inside and out with live steam.

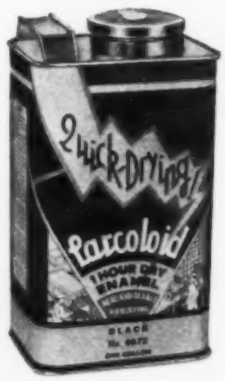
That Larcoloid has stood this severe test with flying colors is proven by the fact that it has been adopted as the fleet standard finish. That means DURABILITY.

Automotive Finishers Enthusiastic

Finishers all over the country are enthusiastic over Larcoloid, the Perfect 1-Hour Dry Enamel. It has furnished the solution to their difficult modern day finishing problems.

No other finish possesses all the important and desirable features found in Larcoloid. It is in a class by itself, combining all the smooth, hard, lustrous qualities with the ability to resist acid and alkali to a degree found only in special finishes designed for that purpose alone.

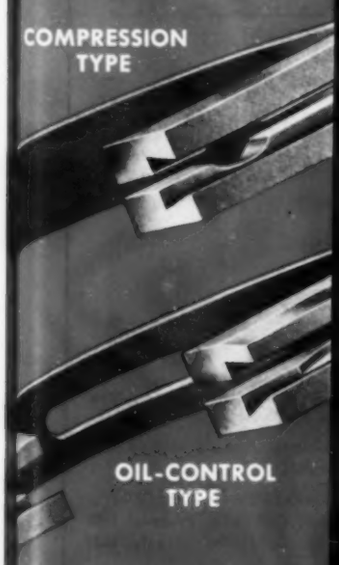
If it is speed, lustre, flexibility, adhesion and durability you want, you want Larcoloid.



Larkin Co Inc.
BUFFALO, N.Y.
Paint Division

White SELLS Pedrick

HYDRAULIC PISTON RINGS



The patented Hydraulic Action principle provides a ring pressure that varies in direct proportion to engine speed—resulting in far greater ring life—fewer tear-downs—less interruption of Service.

THROUGH WHITE BRANCHES AND DISTRIBUTORS EVERYWHERE

Approval by White of PEDRICK Hydraulic Piston Ring installation for service work throughout their organization carries a definite recommendation to all White and Indiana truck and bus owners for service replacement purposes. A test installation of PEDRICK Hydraulics on any make of truck or bus engine will prove their outstanding value. Write us now for money back test installation. The PEDRICK Engine Expert will call and help make the correct PEDRICK Hydraulic Piston Ring installation in the job you select.

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Philadelphia

Expert Department:
GENERAL MOTORS CORPORATION
Expert Division, New York

In Canada:
WILKENING MANUFACTURING CO.
(Canada) Ltd., Toronto

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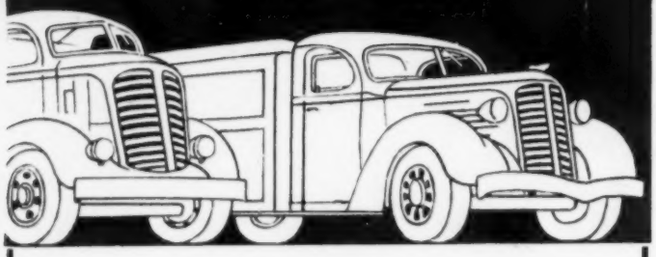

ARE you SAFEGUARDING the quality of the food products you transport? Are you keeping foods clean and sanitary . . . free from odors?

NOW . . . there's an easy, *sure* way to do this.

Protect Perishable Products from Bacteria and Odors

Just wash truck floors, walls and racks as usual, then wipe or spray with OAKITE BACTERICIDE. This new, powerful sterilizer prevents the formation of the bacteria, mold and other harmful growths that cause spoilage and off-flavors. It gives you sweet-smelling, sanitary trucks that assure full protection to perishable food products.

Let us tell you more about low-cost, Oakite cleaning and sterilizing. Write, there's no obligation.

Manufactured only by

OAKITE PRODUCTS, INC.

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Branch Offices and Representatives in All Principal Cities of the U. S.

OAKITE

TRADE MARK REG. U.S. PAT. OFF.

SPECIALIZED INDUSTRIAL CLEANING MATERIALS & METHODS

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FLEET OWNER

Published Monthly in the interests of Automotive Fleet Owners, who Operate or Direct their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

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...for advanced stream-style with exclusive "dual-tone" color design...for half-ton trucks with either short or long wheelbases and the biggest bodies available...for either standard or cab-over-engine trucks ranging in capacity to 12 tons...for "truck-built" trailers...for improvements and refinements that assure greater economy and improved performance.
QUALITY AT PRICES LOWER THAN AVERAGE
Time payments through our own Y. M. A. C. Plan at lowest available rates
GENERAL MOTORS
TRUCKS & TRAILERS
GENERAL MOTORS TRUCK & COACH
DIVISION OF
YELLOW TRUCK & COACH MANUFACTURING COMPANY, PONTIAC, MICHIGAN

He's got the "STOPPERS" all right, but—

IT TAKES *Power* TO PUSH 'EM!

Sure—any good truck can be stopped, if its brakes are in decent shape. And power braking won't increase the braking area a single square inch.

BUT—power braking (Bendix B-K controlled Vacuum Power Braking) *will* positively keep your trucks out of trouble better than any other means you can employ.

For this reason: Braking a truck takes *power*. If the truck hasn't power braking, then it takes *muscle* power—lots more of it. Drivers get tired toward the end of a long day's grind, tooling a lot of tons through traffic. Then's when things happen! And the things that can happen can cost plenty times more than the price of genuine Bendix B-K Controlled Vacuum Power Braking installed on your whole fleet.

This time-proved stopping equipment has been standard on most leading trucks for years. Any truck can have it. Every truck ought to have it. The cost? Well, let's see—about the price of the average fine a man gets for rolling through a stop-light. Write

BENDIX PRODUCTS CORPORATION
Subsidiary of Bendix Aviation Corporation)
401 Bendix Drive, South Bend, Indiana

WHY MOST POWER BRAKES ARE BENDIX

- ★ Least Weight Added
- ★ Fewest Added Parts
- ★ Low First Cost
- ★ Practically No Maintenance
- ★ Instant Remote Control
- ★ All Emergency Features of Train Operation
- ★ Quickly Installed
- ★ Original Brake System Left Intact
- ★ Fully Controlled Power Application
- ★ A Nation-Wide Exchange Plan
- ★ A Nation-Wide Service Organization
- ★ Years of Power Braking Experience and Unapproached Protection Over Future Years of Service

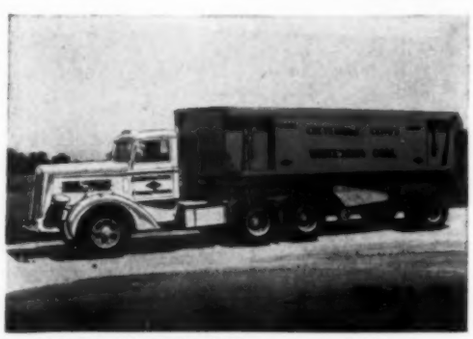
BENDIX

BK VACUUM POWER BRAKING A BENDIX PRODUCT

Controlled Vacuum

POWER BRAKING

of the FWD assures *Positive Traction* Regardless of Road Conditions



FWD Six-Wheel-Tractor and Semi-Trailer Combination with 16 ton coal body

There are numerous advantages embodied in the FWD Truck . . . But they are all summed in *Controlled Power* . . . The rugged construction of the FWD . . . its reserve power and its principle of four-wheel-drive give it *positive traction* with safety at high speeds under all road and weather conditions.

Dividing the load and power over the four driving wheels, as accomplished by the FWD, gives the driver more control over the truck . . . FWD Trucks "make" the hills faster and go into and out of the curves at higher speeds . . . with their powerful engines, wide range of gear ratios, and four-wheel-traction, they cut down trip time.

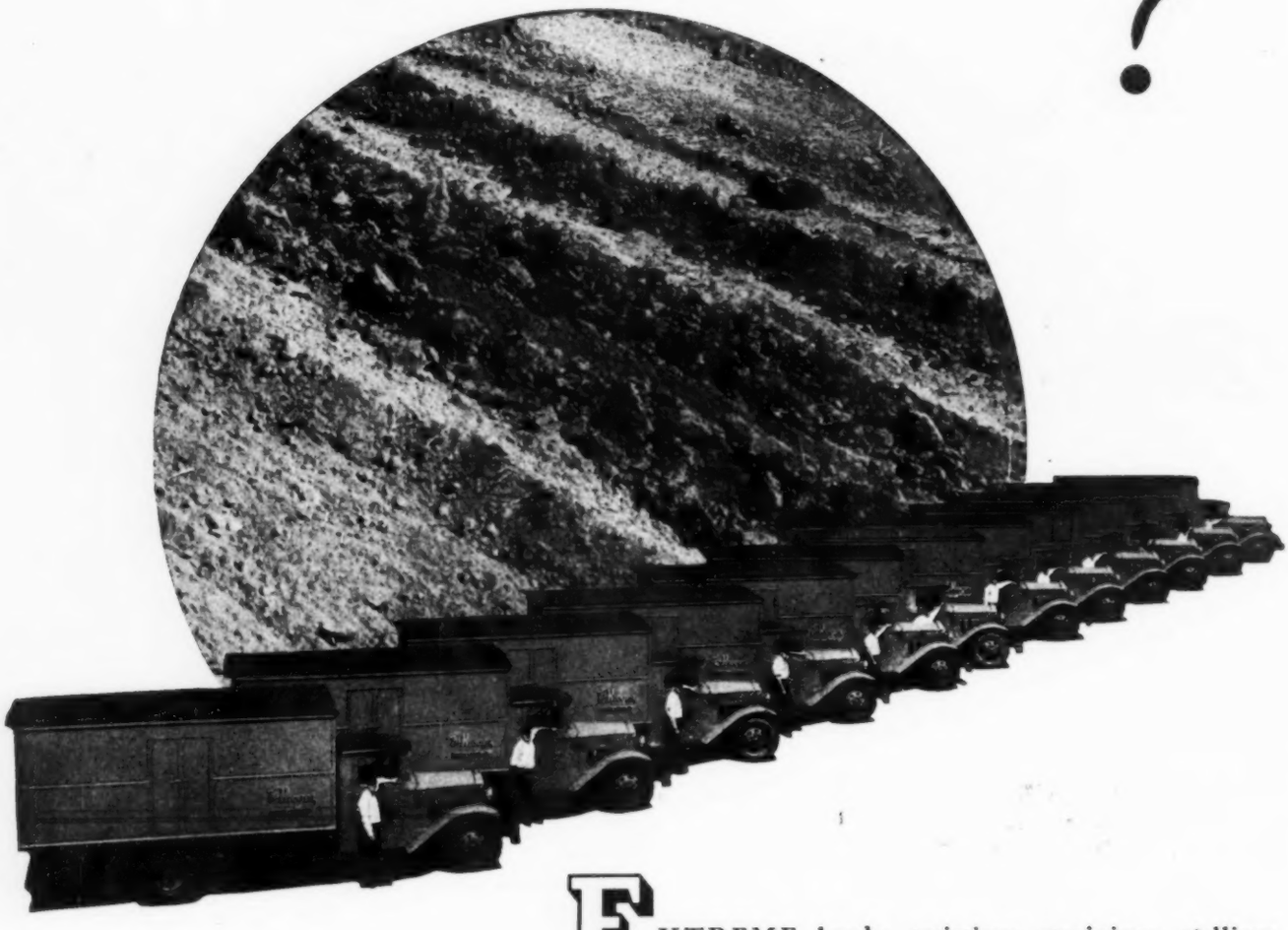
FWD Trucks are safe, fast, dependable, and economical to operate . . . Write for full details of FWD Controlled Power.

THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WISCONSIN
Canadian Factory, KITCHENER, ONTARIO

FWD FOUR-WHEEL-DRIVE TRUCKS

THE SAFEST TRUCK ON THE HIGHWAY

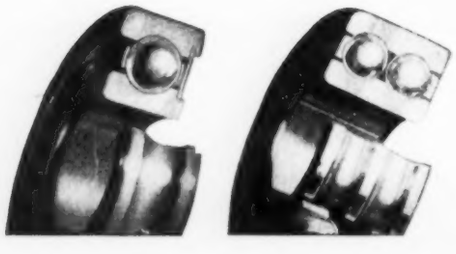
HOW DO YOUR BEARINGS *STAND UP ON ROADS LIKE THIS*?



EXTREME loads; twisting; straining; pulling; weaving; jolting—may not be encountered by fleet owners every day, but when such conditions occur they necessitate bearings that can take it.

You *may* have to go a long way before your equipment meets the conditions shown above. You *will* have to go a long way before you find bearings that stand up under all conditions like SKF.

You don't have to go far to find SKF Bearings. There's an authorized SKF distributor near you.



SKF INDUSTRIES, INC., Front St. & Erie Ave., Phila., Pa.

3813

SKF BALL AND ROLLER BEARINGS

VOL. 18
NO. 4

FLEET OWNER

APRIL
1937

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

DIESEL TAXATION

● Even though you may not be operating Diesel-powered vehicles at the present time, you should concern yourself over the fact that legislators in our various 49 varieties of state governments are getting busy in the way of placing prohibitive taxes on Diesel fuels. . . . The idea, of course, seems to be one of penalizing the Diesel-powered vehicle because it is an efficient one. . . . If you think that it's not important, how do you like this one. . . . . In New Mexico a bill was recently passed and signed by the Governor, imposing a 5c per gallon tax on gasoline and a 10c per gallon tax on "other" motor fuels, the latter including Diesel fuel-oils. . . . However in its passage through the legislature, it was amended so that the excise tax on "other" motor fuels was reduced to 7½c instead of 10c. . . . In other states similar legislation is going on, but because of the combined efforts of many "interested agencies" prohibitive taxes are in many cases side-tracked. . . . If you are interested in learning more about proposed legislation in this respect, you can obtain complete information from the Internal Combustion Industry Committee, 2 West 45th Street, New York, N. Y. . . . This organization is a part of the Diesel Engine Manufacturers Association. The present problem concerns them and it concerns YOU, for, while you may not be operating Diesels today, you MIGHT be operating them tomorrow. . . . Things are happening so fast that it's impossible to give you a list of the states with their respective tax-rates on Diesel fuels. But it behooves you to watch your own pet legislator and fight for your rights. . . . It's easier to *forestall* the passage of a law than to amend one, you know.

TRUCK TESTS

● Peek through the bushes, brother, and you'll see one of the many tests which International Harvester put its new trucks through during 1936, prior to the announcement of its new 1937 "D" truck models. . . . Elsewhere in this issue you'll find the complete editorial new model announcement. . . . This particular test picture shows three trucks of the big fleet operated for several weeks on difficult mountain roads in the vicinity of Chattanooga, Tenn. . . . This

is the famous "W" route up Signal Mountain; note the extremely sharp curves and steep grades. . . . Other tests included miles of driving at "critical" speeds over "washboard" roads which gave cab, body, sheet-metal and unit mountings a real workout. . . . This special test program was apart from regular engineering and factory tests, we are told. . . . It was conducted under the direct supervision of the sales department, far away from the factories and after the engineering department had put the various units through a variety of severe laboratory tests and had given them thousands of miles of test runs on the proving ground.

●

GOVERNORS

● Is an engine governor a safety-device or a maintenance necessity? . . . Many people, including many of those who make or sell governors to fleet operators, have looked upon the governor as (1) a safety device; and (2) an economy producer. . . . We are wondering whether or not you will be as surprised as we were, when you read our "survey" article on governors which appears on pages 26 to 30 of this issue, and when you learn that of the 180 fleet men who participated in our governor survey, only 12 went on record to state that they considered the governor *primarily* as a safety device. . . . Inversely, 61 operators consider the governor to be a maintenance necessity, while 80 stated that the governor is *both* a safety device *and* a maintenance necessity. . . . We are not going to burden you with any further figures on this page, but would recommend this month's survey article on governors as meaty reading. . . . Particular attention should be paid to the various *economies* brought about by governors, which fleet op-

(*Please turn over*)

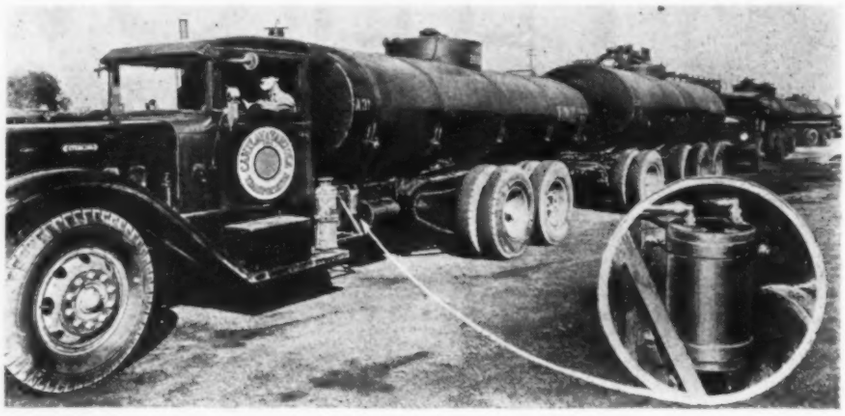
●

H. Clay Fischer
Editor

●

The Editor's Column » »

(Continued from Page 15)



ACID NEUTRALIZER. . . . Diesel operators on the Pacific Coast are using the "filter" illustrated here, as a means of neutralizing the acid content of fuel-oils. . . . Known as the Cunningham Fuel Dehydrator, the device is placed in series with fuel-tank and fuel-pump. . . . Both acids and water are completely dissipated within the unit, the action being somewhat on the order of a battery, but no electric connections are used. . . . Further details, if you want them, will be sent upon request to the Editor.

erators have listed, after *learning by experience* rather than by listening to some enthusiastic salesman. . . . We have always maintained that experience is the best teacher, and, if a bunch of high-class fleet operators can't convince you that governors will reduce your operating costs, we don't believe that anyone else can. . . . In the event that you think we are trying to cram a bunch of propaganda down your throats, look a bit further and learn that we have also listed as fine a bunch of so-called "disadvantages" as ever were pulled out of a hat. . . . Fair enough? . . . We think so.

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FITTING THE TRUCK TO THE JOB

● We have just had the pleasure of adding to our library an interesting book (24 pages, 8½ x 11) bearing the above title. . . . It was prepared from material contained in the sound-film bearing the same name, the object of which is to acquaint truck dealers and salesmen with practically all of the important points in connection with selecting the right *type* of vehicle for the purpose in mind. . . . If you have been puzzled over whether you should use a cab-over-engine job rather than a conventional truck; or whether a tractor-semi-trailer will work better than a six-wheeler in any particular case; how to properly mount fifth-wheels; how to figure various chassis-body dimensions; problems in load-distribution; etc., you will find this book to give you most of the answers in an unbiased manner. . . . For, there's not a line of advertising in it and it's replete with drawings, illustrations and such. . . . Frankly, this book was designed for International's factory branches, dealers and salesmen and we don't know whether there are any copies left for fleet operators. . . . However, if you'd like to get one, free, we suggest that you write to the Editor and we'll hand the bunch of requests to the proper party. We're not making any promises; rather, let it be said that our enthusiasm over this book prompts us to mention it here. . . . Ask for a copy of *"Fitting the Truck to the Job"*. . . . If we can get a copy for you, there's no obligation.

●

A SPLENDID GIFT

● The reception room of the Diamond-T Motor Company at Chicago is now adorned with an interesting and unusual decoration—a hand-woven rug picturing a Diamond-T truck in its actual colors. The accompanying picture, of course, does not do it the slightest justice. . . . The rug was sent as a gift to Mr. C. A. Tilt, president of the company, as an expression of the enthusiasm of two Diamond-T distributors in Greece—the donors being P. Petropolous and H. Haxhi. . . . The truck is beautifully depicted in the familiar Diamond-T red, against a golden background, and on a base of deep browns and greens, producing a colorful and arresting effect. . . . Which we think is a very fine tribute to the company.

●

YOURS FOR A DOLLAR

● If you would like to learn more about power-brakes, may we recommend the new Lathan Power-Brake Manual in its enlarged, up-to-date edition. . . . This is *not* the one that has been offered free on our "literature" page in previous issues, but is a new, more complete and up-to-date manual that can be used as a text-book. . . . Some of the things in it are: Installation data covering "packaged" vacuum brake outfits; mechanical data showing methods for making connections, alignments, adjustments, etc.; valuable formulae for figuring line-pressure of hydraulic brakes; recommendations in connection with vacuum reserve tanks, power chambers, levers, etc. . . . There is a price of $1 per copy placed on this manual; in lots of 5 or more copies, 75c each. . . . The publisher is Lathan Company, South San Francisco, Calif. . . . Send your order directly, if you think you'd want this. We'd appreciate mention of FLEET OWNER, if you please.

●

INTERSECTION ACCIDENTS

● Too often, in intersection accidents, drivers blame each other, according to H. J. Jones, Director of Safety for Automobile Shippers, Inc., Detroit, Mich. . . . "Next time you run across a driver who blames 'the other fellow' for a collision, just remind him that in such a case he is frankly admitting that he was depending on the other fellow and not on himself," Mr. Jones suggests. . . . He also claims that a careful driver using due caution can cross *any* intersection, in *any* town or village without accident, and he does not hesitate to tell his drivers so. . . . It might be a good idea to assure

In wide open spaces with wide open throttles

NEW LOW PRICED WHITES

take most severe tests known!

Tests like these mean dependable, low cost operation in owners' hands

● Not on a smooth track but where nature provides severe grades, variable weather conditions, extremes of heat and cold...in short...every possible kind and degree of "tough" condition...that's where White chose its testing grounds . . . for the first test of its kind ever made.

Operating from a base near Phoenix, Arizona, the new low priced White Trucks have been running continuous 24 hour high speed tests. There are severe grades, some as long as 35 miles. The temperature varies from freezing to mid-summer heat within single 24-hour periods.

After six weeks of driving *each truck 1,000 miles every 24 hours*, they're still at it! That in itself speaks volumes for the trucks.

Running continuously at high speed, stopping only for fuel and changing driver crews, this is the greatest of all possible tests of engine operation. The trucks are operating six days a week, night and day, with three shifts of drivers. In covering their 1,000 miles every 24 hours, the trucks have to average 45 miles an hour, including the time out for changing crews. The trucks are fully loaded and operate with a full-open throttle hours on end. The way these new Whites have stood up under that sort of punishment is nothing short of phenomenal and no one could ask for any more convincing proof of their stamina and ability.

The engineers report that from the standpoint of road-ability, handling ease, power, fuel economy and braking, the new Whites are the most outstanding they have ever put through their paces.

See the new White Model 700 at your White Branch or Dealer or telephone for a demonstration.

THE WHITE MOTOR COMPANY • Cleveland

THE NEW WHITE MODEL 700
$985 AND UP
BASE PRICE at Cleveland Plant for standard chassis
THE LOWEST PRICE FOR WHICH A WHITE TRUCK HAS EVER SOLD

White TRUCKS

COAL AT YOUR CALL. . . . Hauling coal is a cinch for the Clinch Coal Company, Chicago, Ill., and they want the whole town to know about it. . . . So, on billboards throughout the city area they proudly advertise the efficient service they are prepared to render with their new fleet of Mack "Traffic-Type" trucks.

Stripping *the* Thread

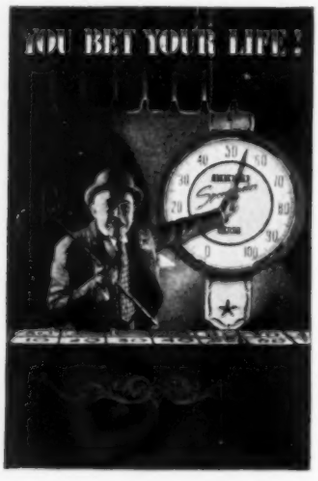
(*Continued from page* 16)

your drivers that if they take a few extra minutes going through towns and cities, it will be well worth while from the safety standpoint.

●

YOU BET YOUR LIFE!

● Remember those interesting booklets *"Thou Shalt Not Kill!"* and *"Live and Let Live!"* that were offered free in this column some months back? . . . Well, another in the same series has just made its appearance; this one is entitled *"You Bet Your Life!"* . . . It gives you a comprehensive analysis of America's automobile accident experience in 1936 and answer hundreds of questions about accident causes. . . . The gambling note sounded in the title of the book is carried throughout the text, illustrations and cartoons. . . . Comparisons of the hazards of traffic with many common games of chance-taking, are used to emphasize the folly of careless driving. . . . The book is a fine thing to pass around to your



drivers. Copies are available, gratis, to any fleet operator who will write to the Editor and ask for them. . . . *"You Bet Your Life"* is published by The Travelers Insurance Company, who assures us that your request for free copies will *not* be followed up by insurance solicitations or presentations, in *any* form. . . . We are glad to act as the "go-between" in securing copies of the book for you.

PROGRESS IN ALUMINUM

● The March 1937 issue of *Trade and Engineering* published by the *London Times* contains a section reviewing the progress of aluminum and its alloys. . . . A copy reached our desk last month and we were quite surprised to note the large number of companies utilizing this metal on the other side of the earth. . . . Equally impressive were the great many uses to which this versatile metal is being put. The three words "lightness with strength" seem to tell the story of aluminum with remarkable simplicity and effectiveness.

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ACTION NEEDED HERE

● Well, we are still crabbing about the new New York City traffic regulations, particularly with respect to the "no right-turn on red" portion of them. . . . After airing our feelings in this column last month, we were complimented by many New York fleet operators, for so genuinely expressing *their* ideas on the subject, but the sad part of it is that nobody seems to be *doing* anything about it. . . . Now, we do not wish to burden our readers with what seems to be a strictly *local* problem. But the facts are that the right-turn-on-red is prohibited in most communities throughout the nation and we (and many fleet operators) think that it ought to be permitted. . . . Why? Simply because it has been tried by New York City for many years and has not been found wanting. . . . Safety records of safety councils, public officials and insurance companies show (unless we are grossly mistaken) that New York City is the *safest* city in the United States, from the standpoint of the number of traffic accidents in proportion to the number of cars on its streets. . . . All of which indicates that there was nothing radically wrong with the "right-turn-on-red" which has been permitted for the past ten years or more. . . . The prohibition (we don't like that word) of this practice is supposed to make things safer for the pedestrian. But does it? Let us analyze it and see. . . . The pedestrian is not supposed to cross the street against the signal. Assume that he wants to cross a main avenue. While he is waiting for the signal to change, a bunch of cars and trucks are piling up in the side street, many of which want to make a right turn, but can't because of the new ruling. . . . When the signal changes and our pedestrian tries to cross the avenue, he is liable to get hit from behind by the stream of cars coming out of the side street making right-hand turns. In fact, by the time these cars have streamed out, the light again changes and he is stuck until the next change, unable to get across. . . . Under the old regulations, these right-turners would have been safely out of the way, up the avenue, perhaps in Yonkers, by the time our pedestrian got the signal to cross, and he could do it unhampered. . . . That's proof enough that the new ruling does not help the pedestrian. We told you how it hinders the driver, last month, right here on this page. . . . It seems to us that if enough pressure is brought to bear upon the City Fathers, by such organizations as the A. A. A., the Automobile Merchants Association, the Motor Truck Association of New York, the Automobile Manufacturers Association, the New York City Chamber of Commerce. etc., something *might* be done about it. . . . It's never too late to change traffic regulations, you know. . . . Who will be the first to start?

●

SOVIET SAFETY

● We are indebted to *American Trucking Associations* for this one: "A truck driver in Moscow, Russia, recently took two drinks of vodka, drove his truck through a safety zone in front of the American Embassy, killed two pedestrians and injured eight others. . . . A few days later, the government announced that the driver had been executed." . . . On which we refuse to comment, save to say: "Severe souls, these Soviets"

FIRST SHOWING

of the New INTERNATIONALS

HERE is the first announcement of the new International Trucks in the gleaming metal dress of today and tomorrow. Here are *eye-values* that tell their own story, ultramodern styling to please every owner and driver, your customers and the general public. But eye-values are not the whole story; more important, in these new trucks, are *the new values underneath the surface.*

Consistent International policy, adhered to through more than 30 years of ALL-TRUCK manufacture, is your assurance that an entirely new beauty of exterior in International Trucks brings also *advanced engineering throughout the mechanical product.*

New standards of utility and performance are offered you in every model of this new line, in sizes ranging from the Light-Delivery unit (shown above) up to powerful Six-Wheel Trucks. The new International Trucks are at your service, on display at International dealer and branch showrooms. Folders describing sizes and styles used in your own hauling work will be sent on request.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. (Incorporated) Chicago, Illinois

INTERNATIONAL TRUCKS

INTERNATIONAL Is World's Leading Builder of HEAVY-DUTY TRUCKS

● International Harvester has been earning this leadership for years, always building into International Trucks all of the power, performance, and capacity that heavy-duty work demands. Constant engineering research along efficiency lines has resulted in rock-bottom economy for every class of service. Ultramodern styling is an additional International advantage. Today's Internationals are splendid trucks . . . beautiful trucks . . . more than a match for any job they are called on to do.

● *Dealers are invited to write for information concerning the International Truck franchise.*

INTERNATIONAL

Above: A powerful International Six-Wheel Truck with armored dump body. *At right:* An interior view of the deluxe ALL-STEEL CAB. Driver comfort, clear vision, and safety are assured in every International model. In the ALL-STEEL CAB the one-piece top, the sides, and the back and cowl panels are welded into the complete cab frame. Rubber mountings stand guard wherever cushioning is needed.

INTERNATIONAL TRUCKS

TRUCK FLEET MAINTENANCE *in* CANADA

(Another Experience Article)

CANADIAN Contract Hauler, operating in coke delivery, believes that the best in materials, workmanship and fleet maintenance pays big dividends. . . . Here's a brief outline of some of his operation and maintenance methods that should make interesting, easy reading. —Editor.

Based on an Interview with James W. Harris, Fleet Operator

OUTSTANDING among commercial vehicle traffic in Toronto, Canada, are the attractive trucks of the James W. Harris fleet. These big, green dump-trucks, rolling along with a 5-ton load of coke as the usual load, and bearing the neatly-lettered name of "J. W. Harris" in gold on both sides, literally seem to bespeak the care and attention that is given to this fleet of heavy-duty dump units.

Being a fleet operator yourself, you would be bound to notice that these big jobs always seem to look as though they had just come out of the paint-shop—or off the wash-rack, at least. We are told that if you were to carefully scrutinize every truck fleet in Toronto—or even in the Province of Ontario—you would have a difficult job finding very many that could touch Harris' fleet for well-kept, smooth-running units. (We make the last statement with reservation, however.—Ed.)

And, if you were to look under the hoods of these vehicles you'd find a spick-and-span engine, glistening with paint and ticking over like the proverbial watch. What is the answer? We'll try to tell you in the following paragraphs.

The answer may be found in Harris' methods of maintenance and upkeep—methods which are applied to such a degree that might prove quite surprising to some fleet operators. The firm of James W. Harris has even been accused of spending too much time and money in keeping its vehicles in tip-top shape, inside and out, but Harris has found that by purchasing the finest of products for use in his trucks and by bending every effort to keep the units in first-class shape, they have been amply rewarded financially and in every other possible way.

We appreciate that it is not every fleet operator who wants to run his business and his vehicles with the same meticulous care as Harris does. However, there are an abundance of money-saving and money-making ideas practiced in this fleet that might well be adapted by anyone in the trucking business—or by anyone who uses trucks as a part of some other business. So let's see how and why they do it.

A short background of this operation might first be in order, together with a sketch of the business itself. Since 1908 James W. Harris has been in the wholesale and retail fuel delivery trade in Toronto and vicinity and for some time past has had the contract for delivery of all coke sold by the Consumers' Gas Company in that city.

The Harris firm has experienced a change-over from horses to trucks and now operates a fleet of 19 units, all heavy-duty, within a 50-mile radius of the city. Runs are short and stops are frequent, the trucks covering an average of 50 miles per day during the busy season.

Summer time is "slack" time for Harris. The trucks do a fair amount of hauling on various outside jobs, bringing in extra money and thus cutting down overhead. However, Harris does not really chase after off-season jobs, preferring to overhaul, paint and

Year ..... JAMES W. HARRIS—COST RECORD SYSTEM Truck No. .....

Items	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
Earnings												
Cost Gasoline												
Cost Oil												
Cost New Tires												
Cost Repair Tires												
Cost Parts												
Cost Mechanic												
Cost Battery												
Cost Painting												
Cost Wages												
Insurance												
Overhead												
Depreciation												
License Cost												
TOTAL COST												
Miles for Month												
Gas for Month												
Oil for Month, qts.												
Miles per gal. Gas												
Miles per qt. Oil												
Total Bushels Hauled												
Cost per Bushel												
Cost per Mile												
TOTAL PROFIT												

clean-up everything—trucks, shops and equipment—during the summer.

The fleet is almost entirely composed of Leylands (British) and Macks, mostly ten-ton gross, carrying five-ton payloads. They vary in age, some of them being ten years old, but so thoroughly modernized and well cared for that they neither act their age nor look it.

One specially-built Leyland, purchased in 1934, is said to be one of the largest units of its kind on the continent, with a capacity of 400 bushels of coke.

While coke is not the cleanest commodity imaginable for handling, Harris trucks manage to preserve that clean-as-a-whistle appearance. Even after a day's work they look better than the average truck does when it starts out in the morning, according to many observers.

This emphasis on appearance is a big point with the Harris fleet. Each truck is washed and polished every night in the shop; and each vehicle is repainted every summer. Day in and day out there is never a spot of rust or a dent to be seen on a Harris truck. Every one of them, old and new, sparkles with chrome plate and high polish. And the same care is applied to the parts that do not show. Motors are painted each year and are kept clean continuously.

As a result, Harris trucks are a travelling advertisement for the firm. They have acquired quite a reputation in and around Toronto, all of which reflects to the credit of the firm.

Clean trucks deserve a clean shop, so Harris provides one. The garage is cleaned out at least every two days and every piece of equipment in it is kept in apple-pie order. Conspicuous by their absence are the pools of oil, piles of scrap in corners, the junky workbench, so often found in many fleet maintenance shops. Call it fussiness if you will, but Harris finds that it speeds work and saves money.

Mechanically, the fleet is on a par with its appearance. Aside from the painting, done by a local firm specializing in this work, the Harris trucks are serviced and overhauled entirely in their own shop.

Each summer every unit in the fleet is completely overhauled. Every major unit is taken down, inspected and brought back to factory specifications or else replaced with a new one. When the job is finished each truck is as close to being a new one as mechanical skill and new parts can make it.

Every bit of work is recorded in a ledger by the chief mechanic, showing the nature of the job and who did it. By the use of detailed and accurate cost system, they keep track of all expenses incurred by each truck.

When business begins to pick up with the coming of cooler weather, the Harris fleet is in top-notch shape to stand the strain of heavy hauling under winter conditions—and it is kept that way throughout the year.

Every driver has "his own" truck and drives nothing else. This system has been found most satisfactory to Harris, because it gives the drivers a sense

(*Please turn to page* 24)

DAILY REPORT

Truck No. ..... Date .....

Hauling .....

Mileage at start .....

Mileage at finish .....

Mileage to-day .....

Gasoline to-day .....

Oil to-day .....

Driver .....

Helper .....

Condition of truck .....

.....

Use reverse side of this card for delays and punctures.

On roadwork give full information as to what you are hauling, No. of trips, No. of tons, No. of hours, etc.

At the top of this page is shown the simple but detailed cost-record yearly analysis used by this fleet. . . . The form shown directly above is the Drivers' Daily Report, which is self-explanatory.

A NEW USE

FOR THE CUMMINS *Dependable* DIESEL

Due to nationwide service facilities, Cummins Diesels continue to grow in demand for every sort of truck service.

Illustrated is the first of a fleet of portable refrigerator car pre-cooling units built by the Vilter Manufacturing Company, Milwaukee, for the General American Pre-Cooling Corp.

Because the shipping seasons for numerous vegetables and fruits in some sections is so short, the growers have found it desirable to use a portable pre-cooling unit which can be transferred from point to point.

The Vilter equipment consists of an ammonia compressor with a capacity of 67 tons of refrigeration a day, a special evaporative condenser and a brine cooler 42 inches in diameter and 12 feet long. The refrigeration furnished by the compressor cools the brine in the cooler and the brine is then pumped through a coil unit placed inside the railroad car. The entire apparatus is mounted on a trailer and towed by a truck.

In a unit of this kind, one prime essential is economical and dependable power . . . the smooth running Cummins Diesel is the universal answer.

CUMMINS ENGINE COMPANY • 520 WILSON STREET, COLUMBUS, INDIANA

CUMMINS DIESELS

Pioneers in Modern Diesel Development

of responsibility for their own vehicles, prevents careless handling and aids maintenance. A man gets to know his own truck like a book after a while, and can easily tell when some little thing has gone wrong. However, drivers are not allowed to make any running repairs. If a breakdown occurs it is handled by the mechanics from the fleet's well-equipped service car. Incidently, breakdowns are few and far between under the Harris system. In two years there have only been a couple of tow-ins and very few road repairs.

Freedom from running trouble is obtained (1) by the system of having the same driver for the same truck; (2) by careful inspection and repairs at night; (3) by the exhaustive overhauling in summer.

Daily report forms are filled in by each driver, giving mileage covered, gas and oil used, description of any troubles encountered. These are used by the mechanical staff in checking the trucks at night. A sample of this form is illustrated on page 22.

Under the Harris Maintenance system all small points are carefully checked. For example, spark plugs are cleaned regularly and replaced as needed. In this connection the firm has experimented with various types of spark plugs on each truck until they found the one that suited each unit best.

The Harris organization has come to the conclusion that only top-grade products are suitable for its fleet. For instance, every truck will henceforth use a well-known brand of blended anti-knock gasoline, something quite unusual in the Canadian truck field, especially where the units are powered by low-compression motors. However, Harris has found that the anti-knock fuel eliminated "ping" on uphill pulls and thus prevented undue strain on wrist-pins, rods, bearings and other engine parts.

Another Harris innovation is the installation of oil filters on all the trucks in the fleet. Experience with this type of device on a passenger car driven by Mr. Harris himself has convinced him that it is a real money-saver. So he had one installed on each truck. The firm reports a big saving in oil changes as a result thereof.

This high standard in purchasing requirements runs all through the Harris firm. Letterheads are neatly embossed on first-grade bond, daily report forms and ledger sheets are equally fine and even their monthly statement forms are embossed. The firm feels that all this is good advertising; that people recognize quality and associate it naturally with Harris service itself.

With such comprehensive maintenance and overhaul methods, Harris requires a good deal of shop equipment. Much of that used by the firm has been specially built for them. For instance, the firm was unable to find a motor tester that exactly filled the bill. So their chief mechanic designed one and had it built to his own specifications.

A simple but detailed cost record system is used by Harris. An exact and itemized account of each truck is kept in a special ledger on a monthly basis, so that a glance tells whether it is paying its way or not. From this is prepared a yearly analysis of each truck's operation in another ledger. A rough reproduction is made of this analysis on page 22 of this article.

From this cost analysis a clear picture of operation for each unit is obtained. Depreciation, license cost, insurance, and overhead items are all figured on a monthly basis, regardless of mileage covered.

In taking care of their units, Harris does not neglect his drivers. Every two weeks a meeting of the full staff is held. The men are given an opportunity to voice any complaints, make suggestions, bring up difficulties and generally discuss the business. This session has been productive of a great deal of helpful information and also assists in promoting employee goodwill.

(Continued on page 68)

MECHANIC'S DAILY REPORT FORM

Truck No._____ Date _____

Description of Work Done	Hours	Extension

Stock Room Supplies	Price

Total Cost_____

*Signed by*_____

*Checked by*_____

Every item of repair work done in this fleet is entered on a form similar to the above. . . . And here is something unusual—the chief mechanic records all of this work in a special ledger, which shows the nature of the repair and the mechanic who did it.

How many miles do you take out of your *Tire Package?*

STRONGER—All plies are *full* plies anchored at the bead—no floating "breaker strips"—every inch and every ounce is there for just one purpose—to produce more miles and a lower cost for you.

COOLER—They flex uniformly without that heat-producing "hinging action" of ordinary breaker-strip tires. Heat kills the life of cords and cuts down the miles in a tire. Generals are *cool*—that's why they run more miles at a lower cost for you.

"COMPACT RUBBER" TREADS—All tires stretch due to fatigue in the fabric, but Generals, having no idle, half-way plies, stretch least of all. The tread is kept compact and compressed against the road—that's why it produces more miles and reduces your cost.

● The value of any package of merchandise cannot be determined except through use. Tires, too, are packages—packages of mileage.

The cost of your tire package can never be determined until the mileage of that tire is run. The initial price is unimportant. To determine cost you must divide price by mileage.

It costs more to build a General Truck Tire because of the way it is built. Thousands of truck operators know it costs less to use Generals because of the way they perform.

General Truck Tires have always been built stronger, to do their work better and deliver greater mileage.

Your General Tire dealer offers you the benefit of his factory-training and practical truck tire knowledge. He may be able to reduce your tire costs materially.

THE GENERAL TIRE & RUBBER CO., AKRON, O.
In Canada—The General Tire and Rubber Co. of Canada, Limited, Toronto, Ontario

THE TRACTION TREAD | THE HIGHWAY | THE COMMERCIAL DELIVERY | THE CLEATED TRACTOR | THE JUMBO | THE ALL-GRIP

One of the most complete lines in the business—each tire built to give you more miles for less money

GENERAL TRUCK TIRES

Engine Governor Experiences in 180 Fleets

By H. Clay Fischer
Editor, FLEET OWNER

FLEET operators are interested in finding out exactly what the use of engine governors is accomplishing in other fleets. There's little doubt about that, for 180 fleet men concerned themselves in participating in our Questionnaire No. 74, which was published in our January issue. And in addition, quite a number of operators who do not as yet use governors, expressed their desire to see the results of this, our latest "survey" on fleet subjects.

As is our usual custom, those 180 men have by this time received their typewritten tabulations of all the replies — confidential and otherwise. You fellows who didn't participate in it will have to be satisfied with the brief resumé that follows. (However, if you care to fill in this month's questionnaire, which appears on page 49 of this issue, we'll gladly send you a copy of the governor summary in exchange, and will also give you the report on the subject which this month's questionnaire covers, as soon as it's ready.) Here's what we found out about the use of governors in automotive fleets:

That the engine governor is getting to be 100 per cent equipment in more and more truck fleets, is borne out by the answers to our first question which asked *"What percentage of your fleet is equipped with governors?"*.... The replies revealed the fact that 147 (out of 180) fleets use governors on their trucks—83 fleets being 100 per cent equipped, and 64 fleets having their trucks equipped in part with governors. . . . Of the 64 truck fleets that are partially equipped, more than half of them are better than 50 per cent governor-equipped. A breakdown of these percentages, too long to reproduce here, is given in our typewritten summary previously mentioned.

The same question, as applied to passenger-cars, revealed that 38 fleets use governors on their cars—10 fleets being 100 per cent governor-equipped and 28 fleets being partially equipped. Of the latter, again more than half are better than 50 per cent equipped. . . . Two taxicab fleet operators who participated in this survey replied that they, too, are 100 per cent governor-equipped.... In commenting on these figures, it might be pointed out that many of the fleets making up our total of 180, do not operate any passenger-cars; perhaps that's why the number using governors on passenger-cars appears to be somewhat low.

Nine strictly bus fleets participated in this questionnaire, as well as another fleet operating buses in conjunction with trucks. Of these 10 fleet operations, 4 are 100 per cent governor-equipped and 6 are partly governor-equipped; the latter 6 fleets use governors on better than 50 per cent of their buses.... The foregoing figures are offered, therefore, to substantiate our conclusion that the governor is quite a popular device among fleet operators and one that is finding increasing usage every day.

Our next question asked, *"At what maximum speeds are your governors set?"* On trucks, the answers ranged from 15, 18 and 25 miles per hour (apparently on dump-jobs moving in congested localities) to as high as 55 miles per hour, the latter speed mostly on light commercial panel jobs.... By and large, the most popular governor-setting for trucks seems to be around 35 miles per hour, although quite a number of fleet operators reported speeds of between 35 and 45 miles per hour. Only 9 fleets covered in this survey have their truck governors set at speeds above 45 miles per hour.

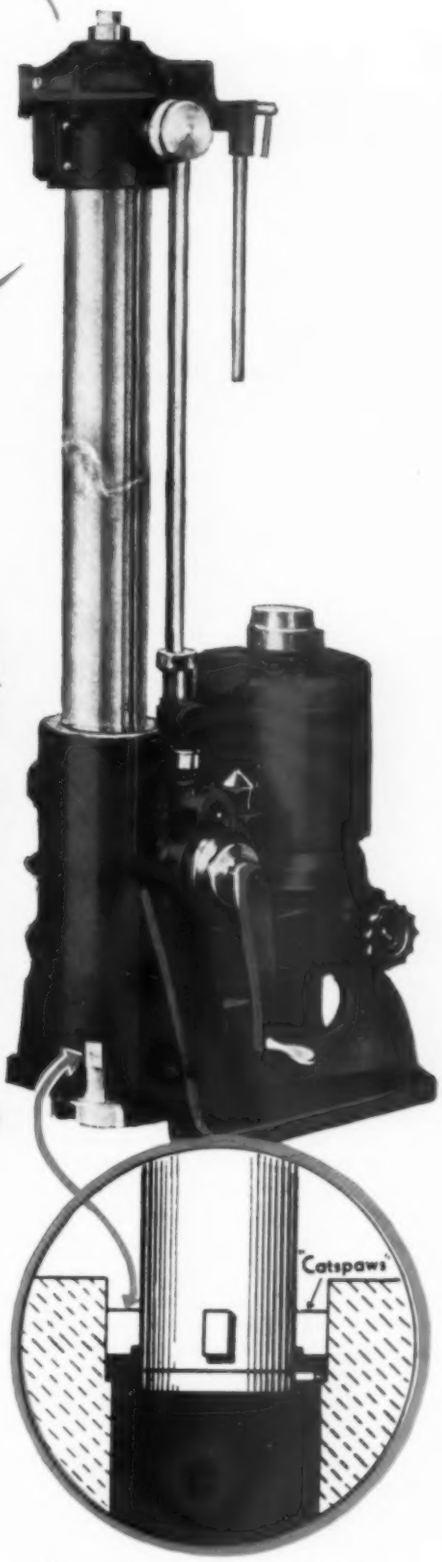
On passenger-cars the "low" speed is 25 miles per hour and the "high" is 65 miles per hour, the most popular or "average" figure being 50 miles per hour. The two taxicab operators reported 35-to-38 and 40 miles per hour.

The 9 bus fleet operators who reported, gave governor-settings ranging from 30 to 45 miles per hour, the popular figure here being 40 miles per hour, 5 fleets specifying this speed. A complete breakdown of the various speeds (if you want it) is contained in our typewritten tabulation, about which we have said plenty already.

(*Please turn to page* 28)

THESE CATSPAWS ARE 4 GOOD REASONS . . .

why I can bore a Finished job in 1 cut



"AND every job is right on the nose—just like it was when it came off the factory line. These catspaws center the bar . . . in no time at all . . . then guide the cutter evenly *all the way* down the cylinder walls. No chatter, vibration, or weaving. No second cut or honing. All set to fit pistons and rings.

One quick cut—that's why Per-Fect-O saves more money than any other shop tool. So give yourself and your men a break. Ask your jobber, or write for catalog sheets.

These patented catspaws—4 non-revolving, expansible supports—guide the fly-cutter *steadily* all the way down the cylinder.

"It pays to Van Normanize"

VAN NORMAN

VAN NORMAN MACHINE TOOL CO. • SPRINGFIELD, MASS.

TWO popular governors of the so-called velocity type, manufactured by Hoof Products Company and Klemm Automotive Products Company. . . . Models are illustrated for single and double intake ports. Note the key and wire-sealing devices. . . . Additional makes of governors are shown on the following page.

other devices. (Correct us if we are wrong here.)

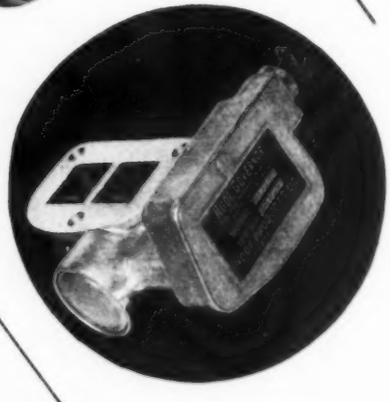
Next we have the "centrifugal" type of governor. This is often referred to as the "mechanical" type. Others call it the "fly-ball" type. But we guess you know what we mean. A total of 38 fleet operators said that they thought the centrifugal type was best, and the fine showing which this type of governor made was somewhat surprising to us, especially since most of these are "built-in" the motors at the factory and are not so simple to maintain, adjust or install as the manifold type. There were other answers to the question as to governor-type preference, to wit: Five fleet men said "Velocity and Vacuum" and we can credit these to both of the above headings, or to the vacuum-controlled heading—just as you see fit. Four more fleet operators mentioned "Velocity and Centrifugal"; one operator said "Vacuum and Centrifugal"; and another operator said that he preferred "Throttle-Stops." . . . Thirty-three fleets did not answer this question.

Next we asked, *"What make of governor is best, in your opinion?"*—or words to that effect. But we are not going to give you the answers here. This is one of those "confidential" things that is reserved only for those men who participate in these surveys. We *will* say, however, that one governor was mentioned far more often than any other; in fact more than twice as many times as the next make, the two leading makes enjoying outstandingly higher figures than any of the other makes mentioned. All in all, there were 10 different makes of governors mentioned, and as in all things, those that have been consistently advertised, seemed to be the most pop-

(*Please turn to page* 30)

Quite controversial is the subject covering the methods of sealing or locking governors to insure against tampering. So we next asked, *"What method of sealing governors do you prefer?"* The time-honored wire-seal method claimed 111 exclusive champions. The lock-and-key type was preferred by 34 operators. Seven fleet men said "Both"—and we don't know whether they mean that either type of sealing device is satisfactory, or whether they prefer *both* a lock *and* a seal on each governor. What do *you* think? . . . Four more fleet operators said that they expressed no preference, and two dozen more did not answer this question.

Being provided with a sealing or locking device is not enough; that is, unless these things are inspected regularly, so we next asked, *"Are your governors inspected regularly, to insure against tampering?"* The answers are self-explanatory and need little comment. Here they are: "Yes"—146; "No"—8; No answer—26.



And now we come to the fireworks. First, with regard to the question, *"What type of governor is best, in your opinion?"* . . . The "velocity" type of governor was exclusively chosen by 55 fleet operators as being best. This type is generally understood to include those governors that are interposed between the carburetor and the manifold and which have some kind of a throttle-plate that is operated by the "suction" of the motor; there are several different makes of "velocity" governors on the market.

The "vacuum-controlled" type of governor was preferred exclusively by 43 operators. When making up this questionnaire it was our understanding that this type of governor includes those which are really of the velocity type, but which are also "controlled" to some extent by vacuum-operated pistons or

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NEW UNEQUALED ECONOMY FOR FLEET OWNERS
plus the greatest pulling power in the low-price range

More Load Space and Improved Load Distribution haul more goods at lower cost

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Whatever your haulage or delivery requirements may be, there are many reasons why new 1937 Chevrolet trucks or commercial cars will do your job more to your satisfaction than any other units you have ever owned.

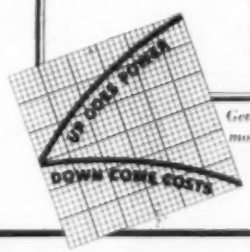
If you need power—the new Chevrolet High-Compression Valve-in-Head Engine supplies it . . . the *greatest pulling power* of any truck in the low-price field! It is economical power, because Chevrolet truck engine design is based upon gasoline and oil saving principles. It is durable, long-life power, because every part and feature of Chevrolet trucks is ruggedly built to withstand hard, continuous service.

Chevrolet trucks and commercial cars bring you *extra* savings with Increased Load Space and Improved Load Distribution. This allows bigger loads per trip and higher earnings per unit. Perfected Hydraulic Brakes are safer, smoother, and far more economical to maintain.

Examine the new lines of Chevrolet trucks and commercial cars. In every feature and detail, including their new and smart Steelstream Styling, they offer new value and new economy to fleet owners.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN

PERFECTED HYDRAULIC BRAKES (with Double-Articulated Brake Shoe Linkage). The smoothest, most efficient, and most dependable brakes ever built • **NEW HIGH-COMPRESSION VALVE-IN-HEAD ENGINE.** Giving even greater pulling power—even greater economy—in an unequaled combination • **MORE LOAD SPACE—IMPROVED LOAD DISTRIBUTION.** Bigger loads per trip—higher earnings per truck • **NEW STEELSTREAM STYLING.** Making Chevrolet trucks for 1937 "the best-looking trucks on the road." • **IMPROVED FULL-FLOATING REAR AXLE WITH NEW ONE-PIECE HOUSING** (on 1½-Ton Models). Super-strong—super-sturdy—built to give many thousands of miles of dependable service.

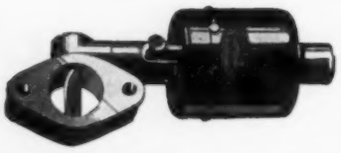


General Motors Installment Plan—monthly payments to suit your purse.

"MORE POWER per gallon LOWER COST per load!"

ular, which proves that they are not going to beat a path to your door, no matter what kind of cheese you put in your mouse-trap; or something. So on to the next one.

Four questions were next asked, point blank. In answer to *"Do governors increase engine life?"*, 142 operators said "Yes"; 6 said "No"; and 32 did not answer. . . . The question, *"Do governors reduce accidents?"* brought 108 "Yes"; 16 "No"; and 56 "No Answers." . . . In answer to *"Do governors increase vehicle life?"*, 137 operators said "Yes"; 6 said "No"; and 37 did not answer. . . . The question, *"Do governors reduce 'tickets' for speeding?"* brought 95 "Yes"; 22 "No"; and 63 "No Answers." . . . All of which is as it should be.



THE Pierce Governor, shown above, is of the centrifugal or "fly-ball" type. The butterfly valve is actuated by two weights mounted on a spider which revolves on ball bearings. Drive is by a solid or flexible shaft.

THE Monarch Governor, shown here, is a vacuum-controlled type. . . . Vacuum, reaching the governor cylinder through built-in passages, actuates a piston which is controlled by an adjustable spring. . . . Piston movement is transmitted to throttle "butterfly" of governor by means of a cam-and-roller device. . . . At the governed speed the working pressure is balanced by the spring.

The majority of fleet operators who participated in this questionnaire seem to agree with the claims of the various governor manufacturers, so we should experience no controversial refutation on these four important questions. The reason for the low number of affirmative replies as to the reduction of "tickets" for speeding is perhaps traceable to the fact that many fleet operators do not experience "tickets" for speeding—or at least, many of those that do, won't admit it, and their "discretion" perhaps prevented them from answering this question more thoroughly, if at all.

And now to a somewhat complicated question, along the same lines. We asked, *"If you have used governors, what reductions in costs have been gained thereby, and if so how much?"* . . . Then we listed the following cost factors: General Maintenance, Engine Repairs, Tire Maintenance, Insurance, Lubrication, Fuel Consumption, Brake Maintenance and Accident Costs.

We will attempt to briefly transpose the answers in the following paragraphs, although they are given in remarkable detail on the mimeographed summaries that were sent to the 180 participating operators.

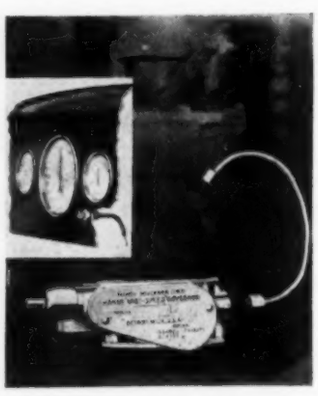
In the matter of reductions in general maintenance costs, directly traceable to governors, 30 fleet operators reported actual cost-reductions ranging from 5 per cent to 75 per cent. . . . In addition, 74 other fleet operators were also able to note reductions in general maintenance costs directly traceable to governors, but were not able to give any definite figures.

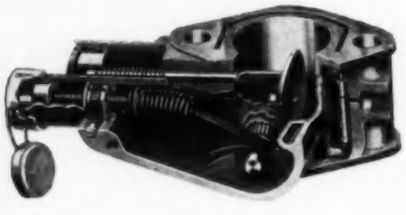
The effect of governors in reducing engine repair costs was stressed by 35 fleet operators, who reported actual cost-reductions also ranging from 5 per cent to 75 per cent. . . . In addition, 67 other fleet operators were also able to note reductions in engine repair costs directly traceable to governors, but were not able to give any definite figures.

In the matter of reductions in tire maintenance costs, directly traceable to governors, 21 fleet men reported actual cost-reductions ranging from 1½ per cent to 75 per cent. In addition, 45 other fleet operators were also able to note reductions in tire maintenance costs directly traceable to governors, but were not able to give any definite figures.

The effect of governors in reducing insurance costs was not so marked, being stressed with percentages by but 6 fleet operators, who reported actual cost-reductions ranging from 5 per cent to 40 per cent. . . . In addition, 23 other fleet operators were also able to

(*Please turn to page* 62)





THE Handy "Vari-Speed" is their latest model. . . . This is available in a dash-controlled model, as shown in the left-hand picture, or in a seal-controlled type as shown in the two views directly above. . . . Engines requiring vacuum spark-advance are provided for by a spark advance control built into this governor. . . . The vacuum piston is also said to prevent "stealing" or "cheating".

RUGGED PERFORMANCE DEPENDS ON SPARK PLUGS—

YOU CAN DEPEND ON CHAMPIONS

All commercial vehicles, whether buses or trucks, must yield rugged performance at all times—under all conditions. No item of equipment is so important to the maintenance of maximum power, economy and dependability as spark plugs.

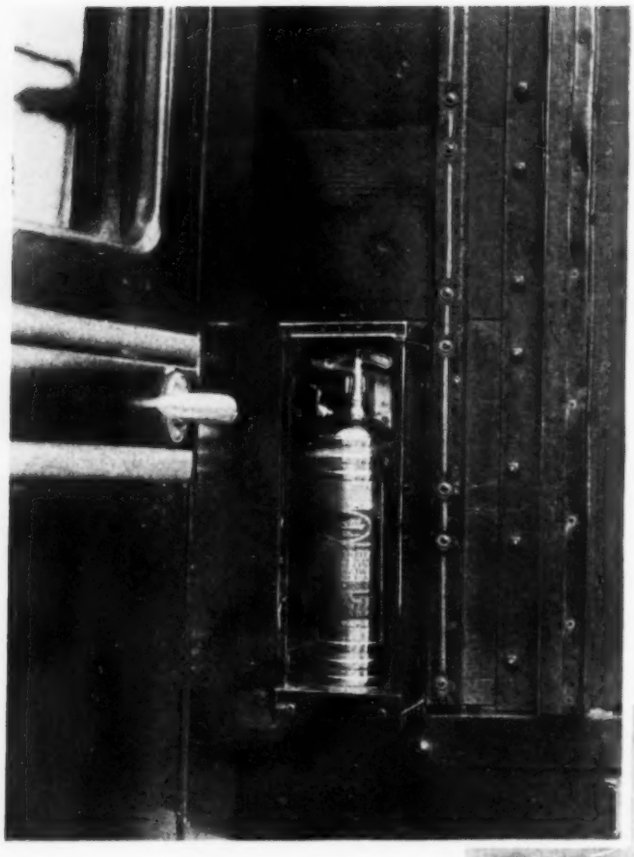
Using the best spark plugs exclusively and periodic inspection, testing and cleaning is the soundest economy in the long run. Champion Spark Plugs qualify as no others do for rugged performance and dependability. This is proved by the fact that the majority of fleets, whose records for maximum efficiency of operation are combined with lowest maintenance costs, use Champions exclusively.

If you have any vexing spark plug problems, we will gladly route one of our representatives to consult with you and advise you. Let Champion engineers show you how to keep your engines operating economically and dependably at all times.

CHAMPION

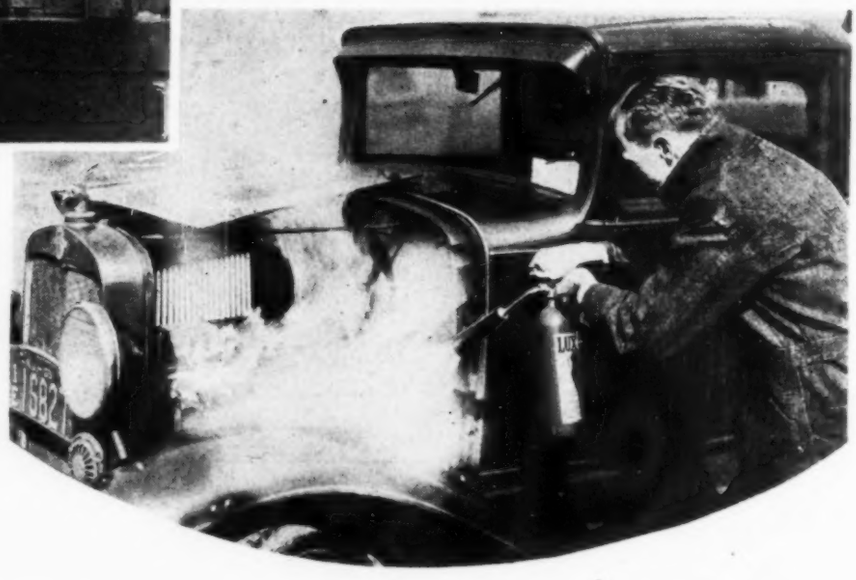
EXTRA-RANGE SPARK PLUGS

CHECK AND CLEAN SPARK PLUGS WHEN YOU CHANGE OIL



LET'S GUARD AGAINST FIRE

- *On the Vehicle Itself*
- *In the Garage and Shop*
- *Types of Fire Extinguishers*
- *How They Work and Why*
- *The I. C. C. Requirements*
- *Every Fleet Needs Protection*



FIRE EXTINGUISHERS, like direction-signals, should be considered on their merits as safety equipment, rather than just as something to buy because the law might require it. . . . In this article we aim to give you a complete, non-technical treatise on fire-protection on the road and in the shop.—H. C. F.

By H. Clay Fischer, Editor, "Fleet Owner"

ALTHOUGH the hazards of fire are always with us, few people in this business of fleet operation seem to give much thought to the matter, except when one occurs; then it is too often a case of locking the door after the horse has been stolen. Naturally, no one likes to think about fires but nevertheless, we *should* give a certain amount of thought towards protection against them.

Perhaps the new Interstate Commerce Commission's safety regulations (about which more will be said later in this article) will result in fleet operators paying more attention to the element of fire-protection. Perhaps the reading of this article will, too. Unfortunately, the I. C. C. regulations do not happen to include anything about fire-extinguishers in the garage or shop, and to our mind this is of even greater importance, especially where hundreds of thousands of dollars worth of "rolling stock" is stored—in other words, fleets of trucks, busses, taxicabs or passenger-cars.

While it is true that many of our modern garages and shops are of "fireproof" construction, this does not absolutely do away with the need of adequate fire-protection apparatus, for use when emergencies arise. In those buildings which are re-vamped horse-stables, or garages of a decade or more ago, good fire-fighting equipment should of course be one of the first requisites. And we don't mean a bucket of sand, or several of the old-fashioned, unsanitary water buckets, either.

Before explaining the principles of the various methods of extinguishing fires, let us first discuss, in simple terms just what "fire" is. It is combustion, and combustion is the union of a substance with oxygen, with so great a development of heat that the substance glows. It is our custom to think and to say that the various combustibles burn "in air."

Practically, this is a fact because the air or oxygen surrounds the burning object, but in truth both substances are uniting and are equally related to the action. Each substance in uniting with oxygen forms its own oxide; carbon forms carbon-dioxide; sulphur

forms sulphur-dioxide; etc. Any method of extinguishing fires illustrates these conditions. Shutting off the air by smothering affects the oxygen; water cools the burning body; pulling the fire to pieces causes loss of radiation; and displacement of oxygen by detonation.

To carry out these principles, a number of chemical fire extinguishers have been devised for use in first-aid fire protection. In this connection we might mention the following widely-used methods, namely: soda-and-acid, foam, carbon-tetrachloride and carbon-dioxide.

Soda-and-acid fire extinguishers contain a device for generating carbon-dioxide rapidly, as by mixing sulphuric acid with a solution of sodium bicarbonate when the apparatus is inverted. The pressure exerted by this gas forces a stream of water containing bubbles of carbon-dioxide. These appliances are effective on incipient fires in ordinary burning materials such as wood, paper, textiles, rubbish or a combination of these materials where the quenching and cooling effect of quantities of water is of first importance.

The fundamental basis of the foam system of fire extinguishing is the use of solutions that when mingled together will create a large volume of carbon-dioxide gas confined in tough, durable bubbles of foam, easily applied and readily adhering to any burning surface. The carbon-dioxide is generated by the reaction between solutions of aluminum sulphate and sodium bicarbonate. Foam is a substance obtained by the second extraction of licorice root. It is mixed with the sodium bicarbonate solution. Foam plays no part in the chemical reaction, but the aluminum sulphate and sodium bicarbonate solution on coming together form a viscous fluid having a very low surface tension, which the carbon-dioxide blows into a foam. The mixture spreads out in a blanket of tough foam bubbles, resembling thick whipped cream of a chocolate appearance. It is most effective on fires of flammable oils in vats or other open vessels. In ordinary burning materials, the foam may be used to coat the surface of the burning area, as a blanket.

Carbon-tetrachloride is perhaps the best-known among hand-operated fire-extinguishing mediums, the standard size for many years being the "pump-gun" extinguisher of one-quart capacity. Carbon-tetrachloride is a low-boiling, non-inflammable liquid that is also well known for its solvent properties, since it is an excellent solvent for greases. The latter properties make it a valuable substitute for gasoline or naphtha in the removal of greases and paint from clothing, upholstery, etc. It is very volatile and its viscosity is something like that of water.

Carbon-tetrachloride is, as we all know, extensively used in the "pump-gun" type of fire-extinguisher. When a stream of this liquid is directed against a burning substance, the heat causes it to evaporate instantly, forming a heavy gas that displaces the air in contact with the burning material. It is a non-conductor of electricity and therefore can be used on electrical fires.

Carbon-tetrachloride, such as is used in fire-extinguishers, will not freeze, even at temperatures as low as 45 degrees below Zero Fahrenheit. In a properly made fire-extinguisher it is non-deteriorating and there will be no evaporation loss if properly constructed and sealed. Unlike the soda-and-acid type which should be discharged and cleaned out annually, and then recharged, the carbon-tetrachloride type needs no maintenance other than a routine examination to be sure that the nozzle is clean. Recharging is not necessary unless the extinguisher has been used.

The carbon-dioxide type of fire-extinguisher is a relatively new method of extinguishing fires and its application is entirely different from those we have mentioned previously. Commercially, carbon-dioxide is principally obtained through the combustion of coke under controlled conditions. The liberated gases are collected, subjected to a process to remove impurities and moisture, compressed to a pressure of 850 lbs. per square inch, and forced into storage cylinders of seamless steel. These cylinders, as well as those of the extinguisher type, are equipped with a safety disc which is ruptured should the stored gas attain a pressure of 2,600 lbs. or more. The pressure in the cylinders varies with the temperature.

When compressed in the cylinders, the carbonic gas

(*Please turn to page* 34)

Left: On the road. . . . This photograph is illustrative of the manner in which bus operators guard against the dangers of fire. Some use the carbon-dioxide type shown, while others use the carbon-tetrachloride type. . . . The right-hand picture shows two types of shop extinguishers—the soda-and-acid type mounted on the wall, and the carbon-dioxide type (on wheels) just below and to the right of it.

is largely liquefied; when released from the cylinders the gas solidifies to finely divided particles of dry carbonic "snow" which has a temperature of 110° below zero. This snow gives the discharge a characteristic appearance somewhat resembling steam. The snow, in subliming back to gas, absorbs the heat from the burning material in great quantities and leaves an inert gas to displace the oxygen. It leaves no residue, neither will it break down chemically or physically when coming in contact with the burning liquid or its vapors. It is a non-conductor of electricity. Its dielectric strength is superior to that of air. It is this same carbon-dioxide, in its solid state, that is commonly known as "dry-ice".

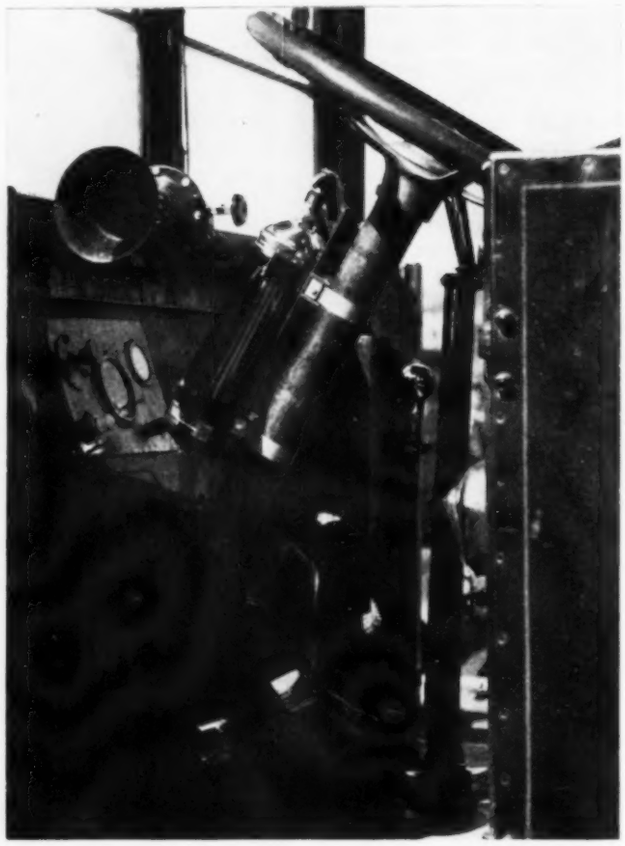
In fire-extinguishing equipment, the difficulty of the gas forming snow and freezing inside the container has been entirely overcome. To accomplish this, the cylinders are equipped with a syphon tube to take the liquid carbon-dioxide from the bottom of the tank. The vapor gas forming at the top exerts a pressure to force the liquid carbon-dioxide up through the syphon tube and metallic hose and finally through specially designed cone-shaped nozzles.

Carbon-dioxide is effective as a fire-extinguisher for special hazards such as alcohol, gasoline, oil, paint, varnish, paraffin, lacquer, flammable chemicals and liquids of a like nature where the blanketing effect of carbon-dioxide gas is useful, and where conditions permit a close approach to the burning area. It is effective on electrical fires as it is a non-conductor of electricity, and can be applied to high voltage without removing the potential.

The properties of carbon-dioxide are such that when air is displaced by it, or mixed with it in suitable proportions, ordinary flammable liquids and combustible materials are extinguished.

No maintenance is ever required of the carbon-dioxide type of fire-extinguisher, except to refill it when it has been used on a fire. On each cylinder there is stamped a weight, in pounds and ounces, which weight corresponds to the full cylinder. In order to check up the amount of gas in any cylinder, it is simply necessary to weigh it on an accurate scale and compare it with the weight stamped on the cylinder. If the loss exceeds ½-pound it should be recharged at once.

The carbon-dioxide type of fire-extinguisher comes in several sizes. The one shown in action on page 32 is of the two-pound type, which means that it contains two pounds of the gas when fully charged. Other popular sizes as offered by different manufacturers contain 4, 7½, 10, 15 and 20 pounds in "portable" models, while larger-capacity models, mounted on wheeled carriages, run in 50, 77 and 100-pound sizes.



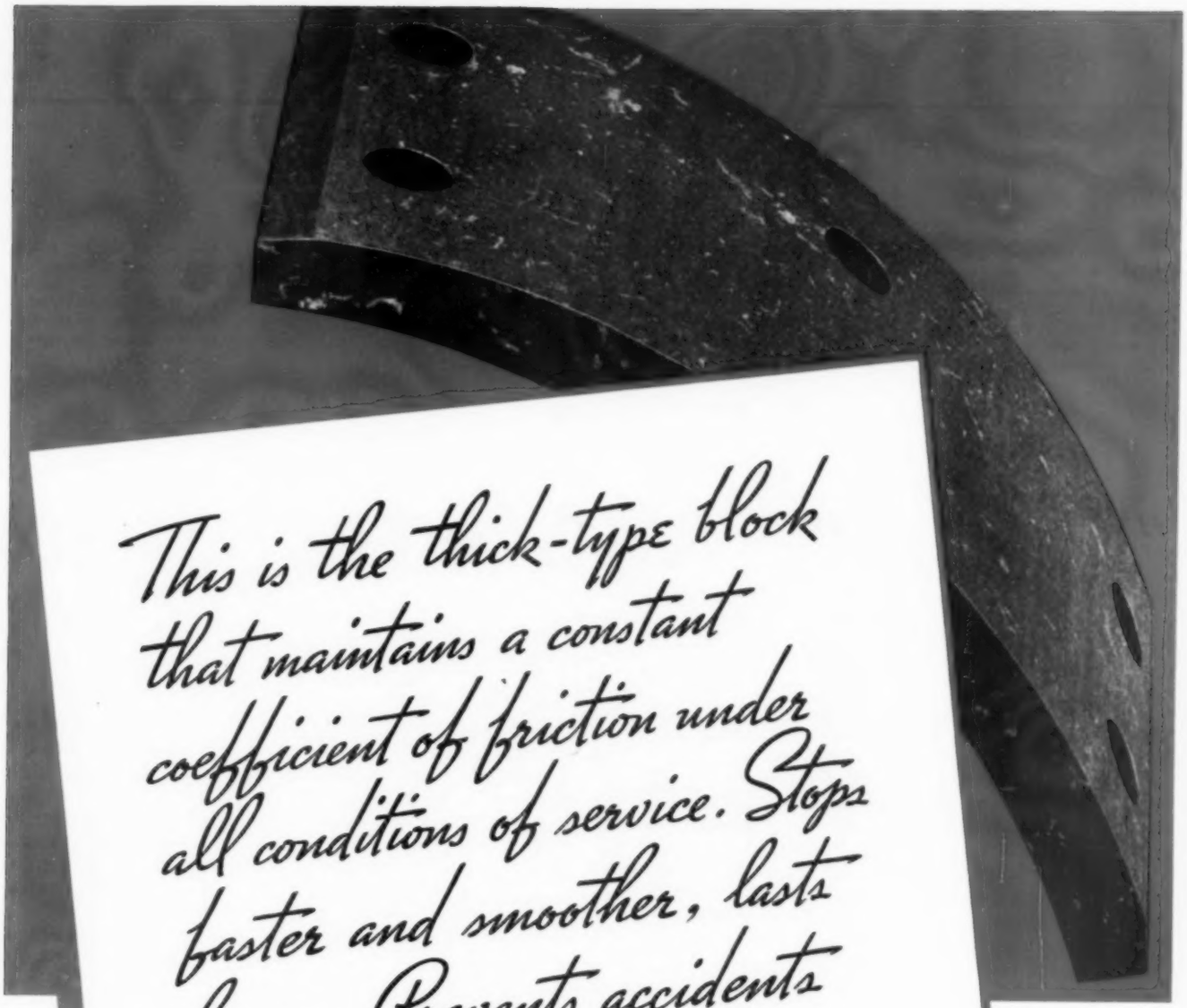
MOUNTING of fire-extinguishers in truck cabs is no longer a problem since manufacturers have provided sturdy brackets. These can be located on steering posts, sides of cowl, on headlining, behind the driver, or on the front of the seat behind the driver's calves. Mounting can be vertical or horizontal, just as you please. . . . Inside of the cab seems to be the best bet, however.

The operation of fire-extinguishers is perhaps well-known to all, but it might be in order to briefly review here a few important points. The soda-and-acid type is put into immediate use by simply turning the cylinder upside-down and directing the stream of chemicals at the base of the flame. As before mentioned, this type must be discharged, washed out with water, and recharged once each year.

The carbon-tetrachloride type of fire-extinguisher (sometimes referred to as the "vaporizing liquid" type) is placed in action by turning the handle to the left and operating it like a pump, directing the stream at the base of the flame. This extinguisher requires no annual recharge, except when used, but the nozzle should be inspected from time to time to make sure that it is not clogged.

The carbon-dioxide type of fire-extinguisher will perhaps require a more detailed explanation, since it is relatively a new fire-fighting device. The extinguisher is first carried to the fire and the valve (located at the top) is opened. The cylinder should be carried in the left hand (by the handle) and the nozzle should be directed at the fire, as shown on page 32. . . . The discharge of "snow" should be directed *close* to the fire, directing it first at the edge nearest the operator, or if on a vertical surface, at the *bottom* of the fire. . . . The operator should then advance the discharge as the flame is extinguished. He should be sure that all flame is out in the part of the fire he is tackling, before advancing any further. . . . The discharge should be continued after the flames are out, so as to coat the hot material with carbon-dioxide "snow." . . . When the fire is over, the extinguisher should be recharged as soon as possible. So much for instructions.

(*Please turn to page* 70)



This is the thick-type block that maintains a constant coefficient of friction under all conditions of service. Stops faster and smoother, lasts longer. Prevents accidents and saves money.

THIS IS THE NO. 99

American Brakeblok

AMERICAN BRAKEBLOK

AMERICAN BRAKEBLOK CORPORATION, 4600 MERRITT AVENUE, DETROIT, MICHIGAN, U. S. A.

THIS discussion of the causes of "jack-knifing" of tractor-semi-trailer combinations, should be somewhat helpful. . . . At least it should make operators a bit more careful in adjusting brakes on such vehicle combinations.

THE unit shown on the left is used for illustrative purposes only. . . . It is very likely a "posed" picture and there isn't the slightest intention to reflect anything on the fleet operator in question or the type of vehicle shown.

"JACK-KNIFING" Can Be PREVENTED!

By G. E. Weaver

WITHOUT a doubt, as a class, no better automobile drivers are to be found on our country's streets and highways than those commercial vehicle drivers who sit at their steering wheels hour-after-hour and day-after-day, directing cargoes of passengers and freight in inter-city and interstate transport.

Alert, vigilant and thoroughly familiar with the vehicles they drive and the exigencies of traffic, these men have established many records for safe-driving that far surpass the average.

Yet, over this group of super-safe drivers there is likely to stalk the menace which is commonly known as "jack-knifing" where tractor-semi-trailer combinations are used. Much has been said on the subject and comparatively little has been done by fleet operators, excepting to see that certain routine brake inspections and adjustments are made.

Taking for granted the fact that the drivers of our tractor-semi-trailer combinations, as a whole, are the most careful drivers on the roads, it is reasonable to assume that the occurrence of jack-knifing accidents, therefore, is evidence of inadequate "safety maintenance" of the vehicles they drive.

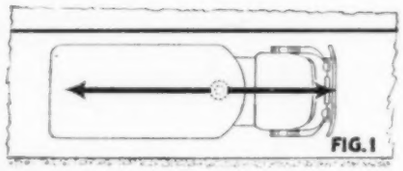
But please do not misunderstand. We do not imply that there is much in the way of actual intentional neglect on the parts of fleet owners and operators. Neither do we wish to make a mass indictment of the engineering features of the tractor-semi-trailer combination as a safe highway unit. Such vehicles have already proved themselves safe ones, in many millions of miles of successful highway operation.

Engineers are constantly studying the causes of traffic accidents, learning new things about motor vehicle operation, and are devising new equipment to make possible more accurate and effective safety services.

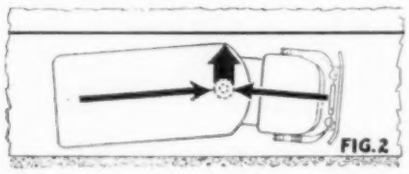
Studies made by these engineers on the causes of tractor-semi-trailer jack-knifing accidents have disclosed that their most frequent cause is to be found in delayed action of trailer brakes.

To explain, Figure 1 indicates a tractor-trailer as it travels on the highway, propelled by the tractor with the trailer drawn behind. The black arrows indicate the lines of force—the pull of the tractor and the drag of the trailer—acting in opposite directions from the pivot or coupling pin so that the two parts of the tractor-trailer unit stay continually in line.

If we apply the brakes to the rear trailer wheels *only*, these lines of force remain unchanged—the momentum of the tractor continues to pull forward, while the drag of the trailer is increased by the amount of brake energy applied. Thus the stability of the tractor-trailer remains unchanged, and in due course the entire unit comes to rest in a straight line.



The black arrows show the lines of force present when the tractor-semi-trailer is moving on the highway. . . . The "pull" of the tractor is shown in the right-hand arrow, while the resistance-to-motion of the semi-trailer is shown in the left-hand arrow.



What happens when only the tractor brakes are applied. . . . The arrows shown combine to build up a force indicated by the heavy arrow, and "jack-knifing" is the result. . . . It is important, therefore, that trailer brakes be set to take hold slightly in advance of tractor brakes.

PROTECT YOUR PAY LOADS!

KEEP YOUR DRIVERS *Alert*

Large photograph shows an alert driver and arrows indicate the intake and exhaust action which circulates fresh air in the truck cab. Above at left shows driver succumbing to foul air and fumes in non-ventilated cab. Directly above is shown the Universal Ventilator installed with marker lights.

LIST PRICES

$10.00

Model 1100 (without marker lights)

$12.60

Model 2200 (with marker lights)

EVANS
UNIVERSAL VENTILATOR
Guarantees a Constant Flow of Fresh Air

DRIVERS OF 1,000,000 VEHICLES ON THE HIGHWAYS TODAY ARE EXPOSED to sufficient quantities of deadly carbon monoxide gas to render them incapable of prompt judgment in emergencies. The presence of poisonous fumes and foul air is a danger to the driver and your pay load. There is only one remedy—fresh air—the enemy of toxic gases and foul air.

The Evans Universal Ventilator completely changes cab air from one to four times per minute. Incoming air is thoroughly filtered, preventing entry of dirt, dust, snow, bugs or insects. Exhaust and intake are easily controlled by the operator and incoming fresh air may be directed against the windshield to prevent fogging. Its complete weatherproofing permits highest efficiency in all kinds of weather without hindering the inlet of air. The Evans Ventilator is readily installed in the field. Write Evans Ventilation-Heating Division of Evans Products Company, Union Guardian Building, Detroit, for full information.

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Ventilating Heating Systems

EVANS VENTILATION-HEATING
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"A quality appearance

BUILDS GOOD WILL," *says Phillips*

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WHEREVER a gleaming Phillips truck is seen, it gives people the *right* impression. Every Phillips truck is a handsome, smart-looking Phillips representative.

And the brilliant, durable DULUX finish that gleams on Phillips trucks is the same finish that gleams on trucks all over the country—because fleet owners call it "tops" for beauty and economy.

DULUX is so durable, it *keeps* its original fine appearance so *much* longer, that it makes trips to the paint shop few and far between. DULUX stands up under mechanical injury, weather, grease and oil. DULUX is resistant to chipping, cracking and corrosion. If you're looking for a way to lower your maintenance costs, DULUX is one sure answer. DULUX can be applied in your own shop, or an Authorized DUCO-DULUX Refinisher can do it for you.

Ask your Du Pont Distributor for details. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Del.

DU PONT

AUTOMOTIVE DULUX

REG. U. S. PAT. OFF.

Any driver or fleet mechanic knows that such a stop must be very gradual, because of the limited amount of effective brake energy that can be applied to trailer rear-wheel brakes; they cannot make a quick enough stop to meet the needs of ordinary traffic, and certainly cannot take care of the emergencies that constantly arise in daily driving. Brake energy must be applied where the weight is carried; and in any stop, a portion of the weight is transferred forward, off of the trailer rear wheels onto the coupling-pin and tractor wheels.

Too much brake power on the rear trailer wheels, thus lightened of part of their load, would merely lock the wheels and cause them to skid, which not only ruins tires but introduces an element of danger, since locked wheels will skid sideways just as easily as they will forward.

Now let us assume for a moment that we apply the brakes on the tractor wheels only, and see what is the effect on stability. Figure 2 illustrates this situation. Note that the lines of force have suddenly reversed their direction—the retarding force of the brakes exerts backward pressure while the momentum of the trailer tends to push forward against the pivot or coupling-pin. So long as these two forces remain in an absolutely straight line, they will counteract or neutralize each other.

But let the tractor-trailer deviate a little from a straight line, and there immediately appears a third line of force (the resultant of the other two) indicated by the short thick arrow in Figure 2, which directly tends to cause a jack-knife. The speed of travel, the suddenness with which brakes are applied, and the amount the tractor and trailer forces diverge from a straight line—these determine the magnitude and effectiveness of the resultant or jack-knifing force.

It is but natural for one to ask what are the factors that cause the semi-trailer to deviate from a straight line. Because there is a constant tendency of the trailing vehicle to side-slip away from the crown of the road is one answer. Another is the effect of side-winds on large, flat-sided van bodies as are commonly used. These are but some of the conditions that cause the driver to be continually straightening out his vehicle by constant manipulation of the steering wheel.

Then too, there are curves in the road, stretches of bumpy roads, etc. And, when going down hill, a heavily-loaded trailer will sometimes cause deviation from a straight line. Then, when the need for an emergency stop arises, and the driver attempts to turn sharply to avoid striking some person or object, he can give this jack-knifing force tremendous power.

But does the driver apply only the tractor brakes and not the trailer brakes? Intentionally, no; but actually, sometimes, yes. Especially, if the trailer brakes are applied by the same foot-pedal as the tractor brakes, there is a measurable elapsed time necessary for the power to travel from the pedal to the trailer brakes—a considerably longer time than is necessary for power to travel from pedal to tractor brakes.

In most tractor-trailer units this means a delay of anywhere from 1 to 4 or 5 seconds, during which tractor brakes are applied and trailer brakes are not. Of a large number of units so tested, the *average* delay in trailer brake application was found to be between two and three seconds.

Not long, surely. But in an emergency stop, plenty of time for things to happen. An ordinary tractor with reasonably good brakes and not coupled to a trailer will slow down from 40 to 22 miles an hour in two seconds; and completely stop in less than 5 seconds. Hitched to a trailer having brakes with just average delay, at the end of two seconds this tractor (weighing about 3,000 lbs.) would be trying to hold to 22 miles an hour while the loaded trailer (about 22,500 lbs.) attempts to forge ahead at 40 miles an hour (original speed), its brakes not yet having been applied.

Obviously if we are to reduce the number of jack-knifing accidents, greater attention must be paid to discovering and eliminating delayed brakes. The service industries must keep continually on the alert to use the best means at their command to maintain trailer brakes at the highest possible point of safety.

Official inspection stations have found in their periodic tests of tractor-trailers that delayed brakes are deplorably common, and that brake timing is a safety factor that must be reckoned with. Their tests are made during an actual stop, which shows up conditions as they actually exist on the highway. Brakes delayed more than is consistent with safety will fail to register during the interval necessary to come to a stop on the tester, and the vehicle fails to receive official O. K. for safety.

The Interstate Commerce Commission, too, has come to recognize the importance of brakes on combinations of vehicles, and in its regulations now specifies that trailer brakes must be so arranged that they will stop and hold the entire combination of units used. On new vehicles purchased on and after July

(*Please turn to page* 74)

SPRAY-PAINTING FUNDAMENTALS

A FEW POINTERS TO HELP YOU DO A BETTER REPAINT JOB

By A. W. Christenson

FLEET OPERATORS who do their own vehicle repainting are all at some time or other faced with the problem of selecting the proper paint-spraying equipment. If the original selection is made with care, it will invariably result in considerable in the way of savings over the life of such equipment, through greater efficiency and service and because of higher quality performance. . . . Then too, better paint-jobs will be assured if the material is applied according to manufacturers' instructions.... Reviewing briefly the mechanics of spray-finishing, we find that in order to apply paint by means of a spray-gun, we need the following fundamental equipment: (1) a spray-gun; (2) a cup for containing paint; (3) a rubber air-hose of desired length, with connections; (4) an oil and water extractor; (5) an air-pressure regulator with dial gauges; (6) an air compressor unit of sufficient capacity. . . . To this must be added safety and health-protecting equipment such as exhaust fans, spray booth, suitable lighting, etc. . . . Our purpose, now, is to deal with the fundamentals, and we will limit this discussion to the six numbered items above.

Of first consequence is the matter of the proper spray-gun. The importance of this selection cannot be overemphasized. While the spray-gun itself depends on all of the remaining five items for its efficiency, it is, in the last analysis, the tool which actually does the painting, and upon which we are dependent for a proper paint film. Bear in mind that equipment manufacturers have available many distinct models of spray-guns, each for a different purpose and condition. Each model may also require a different size air compressor for its operation. For example: a full-production type of spray-gun (capable of the very greatest degree of atomization of the paint, the maximum speed of operation, and complete with all of the essential control features) would require more volume of air than the miniature type of spray-gun designed to operate from a small portable compressor. The full production type of gun is intended for the paint shop whose business is production painting. No substitute will do as well. A professional painter must stand or fall on the quality and the quantity of the work he is able to produce. The finest and fastest spray-gun available is his first requirement. By it, he establishes his standards of performance, and these standards determine his returns.

The miniature gun, on the other hand, is available for the individual who has need for it in his home workshop and will use it for his own amusement. Certainly these small type spray-guns have found their

(*Please turn to page* 42)

"Boss . . . it worked! We made

"Boss . . . it worked! *We made a cent-a-mile saving* this month!"

THIS year several smart fleet men are going to sell their "supers" on the value and economy of Standard Automotive Service—and they'll get the credit for slicing a big chunk off the fleet's cost-per-mile. If that isn't good news, nothing is.

Fleet motors can, and do, go piggish in sixteen apparently innocent ways . . . and you'll never discover their increased appetites until the costs start uphill. The trick of finding those fuel losses, correcting them and lowering a fleet's economy record is the sole job of the trained Standard Automotive Engineer. He's available, free, to every fleet in the Standard Oil (Indiana) territory.

Last year, from January to December, Standard Automotive Engineers cut the operating expenses of thousands of trucks and buses. *The average fuel saving alone was 17%.* Ask the Standard Automotive Engineer in your territory to call and prove his worth to your fleet. He's on our payroll for just that reason.

Then—follow his tune-up instructions—use Standard Products (they've been specifically developed to give you the most for your money)—take advantage of Standard's wide-spread service network—and your fleet will be started on a long time operating economy program.

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STANDARD OIL PRODUCTS: Solite with Ethyl, Standard Red Crown and Stanolind Gasolines • Iso-Vis "D", Polarine, and Stanolind Motor Oils • Standard Transmission Oil (Summer and Winter Grades) • Standard Heavy Duty Gear Grease • Standard Wheel Bearing Grease (Medium and Heavy) • Standard Fibre Grease (for Universals) • Standard Pressure Gun Grease (Medium and Heavy) • Standard Water Pump Grease.

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STANDARD OIL COMPANY (INDIANA)

AUTOMOTIVE ENGINEERING SERVICE

LOWERS MILEAGE COSTS

way into numerous shops, and even factories, but their use in such cases is confined to rough work where the requirements of speed and quality of film are not of first importance. It is even true that certain skilled spray operators (given sufficient time and material) could produce fairly acceptable work with guns of low comparative efficiency, but it would not be fair, in these days of keen competition, to impose such a handicap on a paint shop in which we hold any interest.

These two examples point out the two extremes possible in spray-gun usage, but between these two types are found several models designed to fit the needs of individuals or shops which do not fall into either of the above mentioned classes. These might include automobile sales and service stations, used car departments, fleet owners, garages and individual users.

We now find on closer investigation, that the high-production syphon type gun requires approximately nine cubic feet per minute of free air delivery for continuous and perfect operation. Graduating downward in efficiency, the gun next in line requires about 7 c.f.m.; the next 6 c.f.m., the next 4½ c.f.m., the next 3 c.f.m., then 2½ c.f.m. and finally the last about 1¾ c.f.m.

It now becomes apparent that, having made a careful selection of the most suitable spray-gun, we must make a *more* careful selection of the air compressor unit, as the continuous and uniform operation of the gun depends on a sufficient volume of air at a given pressure at all times. How often this reasoning has been reversed would be impossible to say, but only too often the inexperienced painter is apt to purchase a compressor first and then give consideration to the spray-gun. If the compressor happens to have a great enough output of air, no damage is done, but in most cases the trend is to a smaller size, and its owner finds himself attempting to adapt a gun or nozzle to his air capacity rather than to the quality of workmanship he originally set out to attain.

For example, a compressor with a capacity of six cubic feet per minute of free air delivery would not be great enough to sustain a spray-gun in continuous operation that required a delivery of 9 c.f.m. And thus with each succeeding gun, it would not give its intended performance if limited by inadequate air supply. The painter would therefore be forced to select a gun of lower capacity, but in doing so, he would sacrifice desired efficiency. Therefore a volume of air sufficient for the requirements of the gun is of prime importance.

In connection with this fact there exists a confusing idea among many people as to the relationship of *volume* of air to *pressure* of air. Very frequently we find that mistakes have been made in the selection of the air compressor because attention had been focused on the pressure that the compressor was capable of producing instead of the more important factor—the *volume* of air the compressor piston displaces per minute.

The volume of air displaced by the compressor would be determined by multiplying the area of the piston face by the length of the stroke by the number of revolutions of the compressor. This volume of air must, of course, be stored at a given pressure. If a spray-gun having a nozzle which permits nine cubic feet of free air to escape per minute is used in connection with a compressor whose output of air is only six c.f.m., we soon reach a situation where the gun has used the compressed air in storage and is "starving" for lack of sufficient air under pressure. The gun must then be closed off until the compressor has again "built up" a new reserve, but the process would surely be repeated and no effective results could be expected.

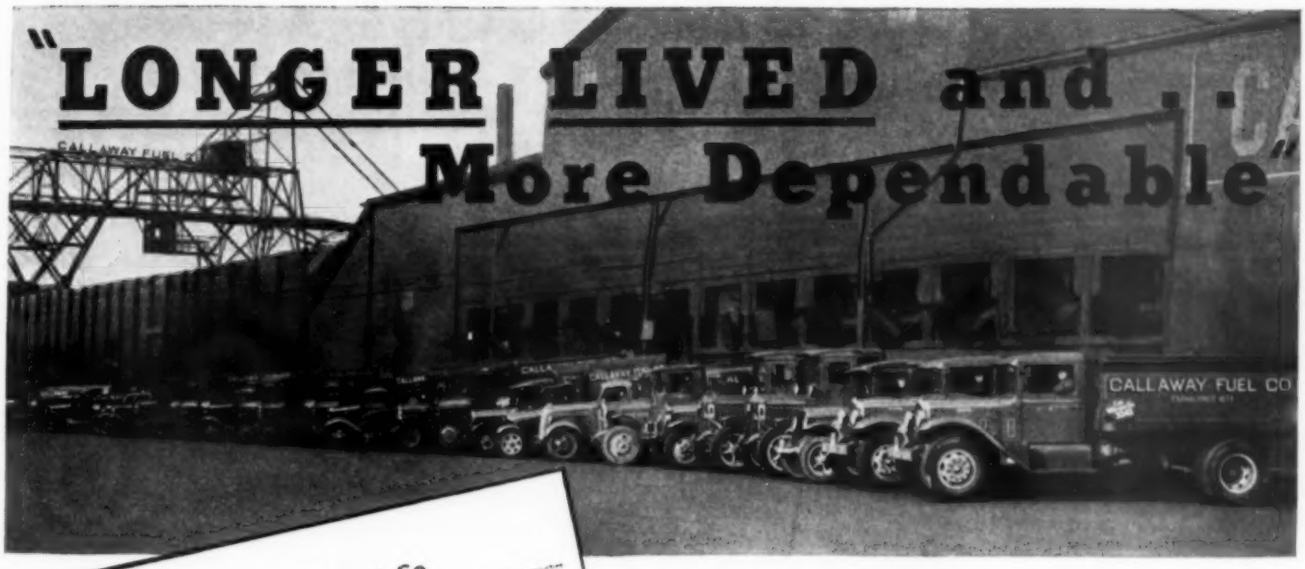
Pressure for automobile and truck finishing purposes usually ranges from 80 lbs. down. High speed factory production sometimes requires air pressures as high as 100 pounds, but this does not usually apply to the average refinisher's conditions. However, it does lead us to the subject of preparing the air for use for the spray-gun.

Given a sufficient supply of air to permit a uniform and uninterrupted service, we must condition the air before it is used so that it will best serve our purpose. Of first importance is the matter of air pressure regulation. Item No. 5 in the list of equipment, the air pressure regulator with dial gauge, is recommended because by its use air may be served to the gun at any desired pressure. Such pressure usually varies with different types and makes of paint, lacquer or enamels. Lacquer usually requires less air pressure for proper atomization than does synthetic enamel, but no fixed rule can apply as each paint manufacturer may vary the characteristics of his product so as to necessitate a change of air pressure with each change of paint.

For instance: most spray equipment manufacturers suggest an average atomizing pressure on production syphon-guns for refinishing work of 50 to 60 pounds. On the other hand, there are synthetic enamels on the market which the manufacturers recommend be sprayed at approximately 20 pounds. To meet this wide variety of requirements, a spray operator must have a regulating device in the air line to change to any desired pressure and to maintain it uniformly. With such a device, the maximum pressure of the compressor is reduced at the gun to a predetermined setting best serving the purpose at the time.

(*Please turn to page* 66)

"LONGER LIVED and . . . More Dependable"



Callaway Fuel Co.

Milwaukee

March 16, 1929

Globe-Union, Inc.
900 East Keefe Avenue
Milwaukee, Wisconsin

Gentlemen:

The combination of your Heavy Duty Batteries and Heavy Duty Spark Plugs has proved so highly satisfactory that we are now standardizing on this Globe equipment for our entire fleet of 32 trucks.

As you know, our fleet consists of both light delivery and heavy duty units engaged in the delivery of fuel oil and coal. Tests over a long time convince us that Globe Batteries and Spark Plugs are longer-lived and more dependable than any other combination we have ever tried. And you know how important uninterrupted service is in this business.

Your Split-Second Starting is a plus-value greatly appreciated by our drivers. We are glad, therefore, to express our complete satisfaction with the quality of your equipment.

Yours very truly,
CALLAWAY FUEL CO.
Jack Barth
Superintendent.

jb/rl

Globe "Full-Spark" Plugs are building new standards of heavy-duty spark plug performance for fleet operators.

Write for a trial set.

That's Why ANOTHER Fleet Standardizes on Globe Batteries and "Full-Spark" Plugs

Again it's *Globe!* "We are now standardizing on Globe equipment for our entire fleet of 32 trucks"—writes the Callaway Fuel Co.,of Milwaukee—"tests over a long time convince us that Globe Batteries and Spark Plugs are longer-lived and more dependable than any other combination we have ever tried. And you know how important *uninterrupted service* is in this business."

Testimony like this from large fleet owners everywhere explains why eight Globe factories and six Globe Branches are now needed to supply this great demand. Such extensive facilities assure prompt deliveries and good service.

Equip *your* fleet with Globe Heavy Duty Batteries and Spark Plugs and know the economy of this perfect combination. Maintenance costs are less — and service is more dependable. Mail coupon for the popular Globe Battery *Service Manual.*

GLOBE-UNION INC., Milwaukee, Wis.
8 Factories—6 Branches to serve you

"SPINNING POWER IS STARTING POWER"

GLOBE BATTERIES

AUTOMOTIVE - HEAVY DUTY - RADIO - POWER & LIGHT

GLOBE-UNION INC., Milwaukee, Wisconsin
☐ Send details about Globe "Full-Spark" Plugs.
☐ Please send Service Manual and full information on Globe Heavy-Duty Batteries.

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Firm .....
Address .....
City and State FO-8

OWNERS OF GASOLINE AND DIESEL EQUIPMENT APPROVE STRINGENT TESTS FOR MOTOR OILS

Is it good oil? How thoroughly will it lubricate? These, and many others like them, are questions that have plagued motor owners constantly. The only way they could judge a motor oil was to try it in their motors for a considerable period of time. This "pig-in-a-poke" problem has now been solved. Motor owners can now make several simple tests that show accurately how any oil will act in actual operation. It is no longer necessary to endanger expensive motors by using them as test "guinea pigs" for motor oil.

A group of petroleum and mechanical engineers of the Macmillan Petroleum Corporation developed the tests of motor oil by first listing the qualities a fine motor oil *must* have. Then, these engineers developed simplified mechanical ways of testing the qualities listed. The *must* qualities selected by the engineers were:

A fine motor oil must maintain an unbroken film on metal under extreme pressures.

A fine motor oil film must also remain unbroken under conditions of unusual heat.

A fine motor oil must cling to metal surfaces for long periods of time.

A fine motor oil must be able to penetrate and creep to seemingly inaccessible surfaces to prevent friction.

A fine motor oil must not leave harmful, hard carbon.

A fine motor oil must not corrode metal surfaces.

In other words, a fine motor oil must quickly form a film between all moving metal parts of a motor, and then, stay there under extreme conditions.

1. FILM STRENGTH

To test and prove the pressure-resisting film strength of oil, the engineers use the film-strength testing machine pictured here.

This machine consists of a small electric motor which rotates a twin belt driven jack-shaft at 500 revolutions per minute. A Timken tapered roller from a stock Timken bearing is locked in a lever system that applies direct pressure of the roller on a Timken roller bearing cup that is locked on the end of the rotating jack-shaft. The lever system multiplies the pressure of the weights added at the end of the lever arm so that *each one pound weight increases the pressure at the ratio of 800 pounds to the square inch.* Weights are added each half minute until the oil film breaks. This test is too severe on many compounded or blended oils. Some withstand from 1 to 7 weights but Macmillan Ring-free withstands 20 and more weights, or upwards of 16,000 pounds pressure.

2. RESISTANCE TO HEAT

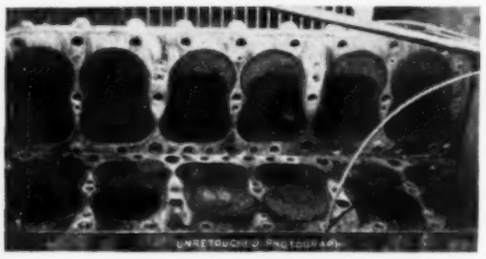
To test and prove the heat resisting quality of motor oils the same machine is used, and in this case, the oil is heated and tested while hot.

Many oils suffer great loss of film strength under conditions of unusual heat which too often allows metal seizure and mechanical break-down in actual operation. The best motor oil is the oil that retains its *full film-strength even at high oil temperatures.*

Points of friction in a motor vary in temperature depending on many conditions such as location close to point of combustion, fit of the motor parts, flow of oil and the condition of the cooling system. It is good maintenance policy to be sure a motor oil has sufficient margin of extra resistance to heat to withstand abnormal conditions.

3. CLING

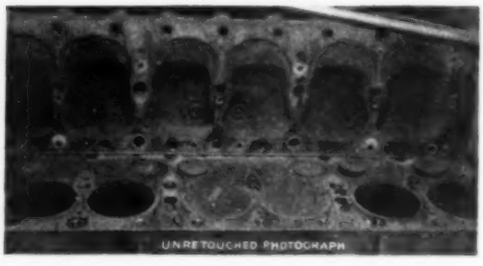
To test and prove the tendency of an oil to cling to metal surfaces, a modified set of laboratory balances are used. Identical steel paddles machined to a sharp drip point are cleaned and set in balance on the scales. Then, the paddles are dipped, one in each oil to be tested, and again hung on the scales. Surplus oil gradually drains off and the weights of the oil left on the paddles shows which oil clings the longest. With this equipment the oils can be tested either hot or cold.



Studebaker Motor at 47,509 miles.

Same Motor after 2956 miles with RING-FREE

The quality of cling is of vital importance in a motor oil. When motors are stopped, the hot oil has a natural tendency to drain off the hot vertical surfaces of the internal parts. To prevent excessive wear when the motor is again started an oil film must be present on all surfaces. The oil that clings the best, leaves the best film, thus reduces the wear on cold starts more than other oils.



4. PENETRATION

To test and prove the degree of penetration of an oil, these engineers selected the problem of loosening nuts and bolts on old rusty mufflers. Every mechanic knows that these bolts are generally so rusted and baked into place that it is practically impossible to loosen them. Try one oil on a couple of them and the other oil on a couple more. The oil that loosens the nuts and bolts quickest, proves it penetrates best.

This quality of penetration is more important in modern motors with their miscroscopic tolerances than in old style, loosely fitted motors. In addition, points of the motor not served by pressure oil systems such as valve stems and guides, top piston rings and upper cylinder walls too often suffer from lack of oil. The best oil will reach these points by its quality of superior penetration.

Faster penetration occasionally shows up when oil pans are slightly loose and crankshaft packings are worn. Then, penetration causes a loss of oil which is often mistaken for over-consumption.

5. REMOVE CARBON

To test and prove quickly the ability of a motor oil to prevent and remove hard carbon deposits is quite possible. The best test is, of course, actual use.

A quick convincing test of carbon formation and carbon removal can be made with a standard type heater with rheostat control and several evaporating dishes. Place a dish on the heater and heat it to the proper degree. Drop two drops of any popular brand oil on the hot dish. Watch it evaporate and see the carbon it leaves behind. Make the same test with Macmillan Ring-free Motor Oil in another dish and see that no carbon is left. Then, reheat the first dish with its dirty carbon blotch and, when hot, place a drop of Macmillan Ring-free on the carbon spot. It will evaporate taking the carbon with it.

This quality of carbon removal naturally turns oil black in dirty motors and the oil is judged dirty and worn-out by mechanics who are not acquainted with this feature. To prove such darkened oil

is still good, simply test its film-strength on the machine.

Carbon is without question the No. 1 curse of motor operation. The motor oil that washes carbon troubles away will not only save great sums of money for gasoline motor operators but will be even more God-send for the owners of diesel equipment in releasing stuck piston rings and keeping the rings free. The best carbon removing motor oil will more than double the time between overhauls, and often rescue a clogged motor from an immediate overhaul.

6. NON-CORROSIVE

The sixth quality of freedom from corrosiveness is of growing importance because of the new-type alloys used in crankshaft and connecting rod bearings and because of hood and radiator design trends that injure the efficiency of the cooling systems. To test and prove whether or not an oil is corrosive use the Federal Government test for corrosiveness printed in its publication, "Federal Specifications for Lubricants and Liquid Fuels," No. VVL791, published October 3, 1933. In this pamphlet under the index number F 511 is this instruction:

"Place a clean strip of mechanically polished pure sheet copper about ½ inch wide and 3 inches long in a clean test tube. Add enough of the sample oil to be tested to cover the strip completely. Close the tube with a vented stopper and maintain for 3 hours at 212 degrees Fahrenheit. Rinse the copper strip with sulfur-free acetone and compare it with a similar strip of freshly polished copper. Discoloration or pitting indicates corrosion." This is what happens when corrosive oils are used in motors with copper-lead, cadmium silver or other of the new motor bearing alloys.

This simple test proves conclusively whether or not a motor oil contains corrosive material. Many oils will gradually become corrosive in use. The products of combustion help to form corrosive materials that wash down into the crankcase.

The combination of these seven tests definitely prove the lubricating qualities of a motor oil. Yet, some mechanics not well versed in lubrication will not consider such tests as conclusive evidence. On the other hand who can deny that when any group of motor oils is subjected to these same identical tests, it is not difficult to determine the merit or strength of one, and the weaknesses of the others. They will argue that the best test is actual use. So, engineers who developed these tests went further and devised a simple performance test to prove the friction-reducing quality of an oil.

The test is based on first realizing the amount of friction present in the average motor and then watching for evidence that that friction has been reduced. One of America's leading automotive engineers made this significant statement in the October, 1933, issue of the S. A. E. Journal: "With regard to engine friction at 40 miles per hour, 50 per cent of the horsepower developed by the engine is used in overcoming this loss."

In other words, at a speed of 40 miles per hour on the level road half the gasoline used is eaten up overcoming friction inside the motor. And, remember, that is the condition when the average high-quality oils are used. With poor oil the friction loss is greater.

Friction in the motor not only causes power loss but is the cause of practically all wear on motor parts. If that friction is reduced; then power is increased and wear is reduced.

The best motor oil will reduce friction more than ordinary oils, thus releasing more horsepower to the driveshaft which, in turn, will cause the car to perform better. Simply see how many feet distance is required to accelerate from 10 to 60 m. p. h.; first with one oil, then with another. Or, see how fast your car will go over a hill, starting at the bottom at ten miles per hour. Use one oil; then the other. Or, using a "Gas-per-mile" gauge, see how far your car will run on a 1/10 gallon of gasoline with one oil and then the other, on a level highway.

These are all performance tests that prove comparatively the amount of horsepower delivered by the motor. Improved performance is also eloquent proof that friction-wear has been reduced in the motor. Less wear means less repair and longer motor life.

Any oil that sets a high record in all these tests, proves it has the strength to stand-up under the most strenuous operation. Macmillan Ring-free Motor Oil is "custom-tailored" by a patented refining process that gives it these ***must*** qualities. Macmillan engineers spent seven years developing this refining process. They demanded that the process eliminate the practice of blending, the use of excessive heat and that it produce a pure petroleum product that is not doped or doctored in any way—an oil that would be sludge-free.

You can quickly prove for yourself whether or not they succeeded by testing Macmillan Ring-free Motor Oil in comparison with any other motor oil available today—by any of these practical exacting tests, or by a genuine performance test in your power equipment.

A TRIBUTE TO THE *finest* MOTOR OIL

● In thousands of gasoline and diesel motors throughout the land Macmillan Ring-free Motor Oil is running up new records of lubrication. Hundreds of users have written testimonials of their experiences with this oil. These are the RING-FREE honor roll and today they include the following makes of motors:

HONOR ROLL

DIESEL MOTORS

ALLIS-CHALMERS
ANDERSON
ATLAS
AUSTIN-WESTERN
AUTOCAR
BUCKEYE
BUCYRUS-ERIE
BUDA
BUSCH SULZER
CATERPILLAR
CHICAGO PNEUMATIC
CLARK
CLETRAC
CLIMAX
CUMMINS
DIAMOND T
FAIRBANKS-MORSE
FULTON
HERCULES
HUG TRUCK
INTERNATIONAL
GALENBERG
LATHROP
MACK TRUCKS
McCORMICK-DEERING
MUNCIE
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NORBERG
ST. MARYS
STERLING
TWIN COACH
VENN-SEVERIN
WAUKESHA
WAUKESHA-LIMA SHOVEL
WAUKESHA-HESSELMAN
WITTE
WOLVERINE

GASOLINE MOTORS

ALLIS-CHALMERS
AUTOCAR TRUCK
CASE TRACTOR
CATERPILLAR
CHEVROLET
CLETRAC
CONTINENTAL
DANDEE MIXER
DEXTER FOLDER
JOHN DEERE
DIAMOND T
ELCO
FAGEOL TRUCKS
FARMALL TRACTORS
FEDERAL TRUCKS
FORDSON
FOSTER COVERS
FRANKLIN PUMPS
G.M.C. TRUCKS
HALLSCOTT
HICKOK RULERS
HOLT
INDIAN MOTORCYCLES
INDIANA TRUCKS
INGERSOLL-RAND COMPRESSORS
INTERNATIONAL
JOHNSON PUMPS
LE ROI GAS ENGINES
LOGEMAN COMPRESSORS
LORAIN SHOVELS
MACK TRUCKS
MASSEY-HARRIS
REO TRUCKS
REX MIXERS
ROSEBACK PERFORATOR
SEYBOLD CUTTER
STERLING
STEWART TRUCKS
TWIN COACH
UNITED MOTORS
VILTER COMPRESSOR
WHITE TRUCKS
YORK COMPRESSOR

MACMILLAN
RING-FREE
MOTOR OIL

1. GREATER FILM STRENGTH
2. HIGHER HEAT RESISTANCE
3. LONGER CLING TO METAL
4. FASTER PENETRATION
5. REMOVES HARD CARBON
6. IS NOT CORROSIVE

MACMILLAN PETROLEUM
CORPORATION ▪ 530 W. 6TH ST., LOS ANGELES, CALIF. OR EL DORADO, ARK.

• NEWS of the TRUCK INDUSTRY •

White Launches $2,000,000 Expansion

WHITE Motor Company, Cleveland, Ohio, announces plans for the largest expansion program ever undertaken in its history. . . . Robert F. Black, president, revealed that more than $2,000,000 will be spent within the next year-and-a-half for new machinery and tools, property repair, building construction and the installation of a complete new plant for the building of heavy-duty coach bodies for city service. . . . Most important items in the plan, as outlined by president Black, are those calling for the construction of a spacious combination testing plant and research laboratory, and the bus body building division; purchase and rearranging of new machinery, tools, etc.; heat-treating equipment; dynamometers for engine testing; creating of greater storage facilities; and general property improvement.

•

I. H. C. Holds Truck Sales Meetings

INTERNATIONAL Harvester Company's truck division held a series of interesting and instructive sales meetings during the month of March . . . . All-day meetings were held, at which sales and advertising plans for 1937 were discussed with more than 600 branch managers and key men. . . Executives addressing these meetings included J. L. McCaffrey, director of domestic and Canadian sales; W. F. McAfee, manager of domestic sales; R. C. Archer, assistant sales manager; F. W. Heiskell, advertising manager; W. D. Reese, chief engineer motor trucks; P. V. Moulder, truck sales manager; C. E. Stevens, assistant truck sales manager; and W. C. Schumacher, of the truck sales department.

•

New District in Northern New Jersey

AUTOCAR'S northern New Jersey territory has been made into a new district with J. B. Rosenquest, formerly manager of their Newark branch, as district manager in charge of the new northern New Jersey district, with headquarters in Newark. . . . Mr. Rosenquest has been Newark Manager for the past three years. . . . Prior to his association with Autocar he was connected with White and General Motors Truck Company

Newark Truck Show, November 6 to 12

THE FOURTH Annual National Motor Truck Show will be held in the Newark Center Market Bldg., Newark, N. J., on November 6 to 12, 1937, according to John F. Winchester, President. . . . The plans are to make this week a real "National Motor Transportation Week". Plans are also being made for holding of the annual banquet during show week, and for the holding of S. A. E. regional meetings in that city at that time.

•

Chevrolet Stages Another Truck Run

HARRY HARTZ, racing driver, outlined his recent 10,000-mile tour around the border of the United States to W. E. Fish, Chevrolet commercial car manager, and John W. Smith, president of the Detroit City Council, at the conclusion of the run last month. . . . Driving a standard

Chevrolet half-ton model loaded with a certified 1000-pound pay-load, Hartz averaged more than 20 miles to the gallon of gasoline throughout the tour, according to unofficial records released by Stanley Reed, American Automobile Association representative, who accompanied Hartz on the tour.

•

Josephs New Mack Engineering Chief

MACK Trucks, Inc., announces the appointment of L. C. Josephs, Jr., as chief engineer. He will make his headquarters at the company's Allentown, Pa. plant. . . . Mack also announces the appointment of C. T. Ruhf as production manager; C. J. Moran as assistant general superintendent; and C. F. Drumm as general service engineer.

I. H. C. Enlarges Manufacturing Facilities

INTERNATIONAL Harvester Company announces enlarged manufacturing facilities at its two big truck plants located in Fort Wayne, Ind., and Springfield, Ohio. . . . At Fort Wayne an axle manufacturing unit with 125,000 sq. ft. of floor space was built. . . . Engine production departments were also enlarged. . . . At Springfield, where light-duty Internationals are made, new buildings totaling more than 300,000 sq. ft. of floor space were erected. These included a new assembly unit, with three parallel assembly lines, each almost 1200 feet long. . . Other new buildings provide greatly increased cab, body and sheet-metal parts producton and painting facilities.

•

January-February Sales Break Records

SALES of passenger cars and trucks in the United States during January and February of 1937 broke all previous records for the period, according to Alfred Reeves, vice-president and general manager of the Automobile Manufacturers Association. . . . A total of 561,769 passenger cars and commercial vehicles were delivered to buyers in the country during the two-month period. . . . This was a 19 per cent increase over the same period in 1936, and was 8 per cent above the best previous similar period in 1929.

•

White Sales Figures Up in 1936

WHITE Motor Company and subsidiaries for the year of 1936 had a net profit of $681,628 after allowing charges for amortization, depreciation and taxes. . . . The net profit is equivalent to $1.09 a share on outstanding stock. . . . This compares with a net loss of $2,911,736 incurred in the preceding year. . . . Net sales for 1936 amounted to $28,769,875, an increase of 44 per cent over the $19,907,859 produced in 1935. . . . Unit sales increased by 83 per cent between the two years, with the latter period sending out a total of 11,495 White and Indiana trucks.

•

Coupe-Pickup Added to Ford Line

FORD announces the addition of a 5-window coupe with pickup box attached. . . . The new unit is readily adaptable for light delivery service and is available with either the 60 h.p. or 85 h.p. motor. . . . Inside dimensions of the box are 33 inches wide, 64 inches long and 12 inches deep. The price of the pickup box takes into consideration an allowance for the rear deck lid, which is not provided with this job.

•

Autocar Truck Sales Increase

AUTOCAR announces that although production was greatly increased at its factory, Ardmore, Pa., during February, by the installation of permanent night crews, the Company entered March with a record-breaking volume of unfilled orders. . . . Their increasing spread into the medium-duty field is made possible by the two new models announced late last year.

DIAMOND·T

Diamond T special streamlined ice cream truck, available as a complete unit, in four popular capacities.

DESIGN . .

Diamond T engineering development never ceases and never postpones a *proved* improvement. That is why the Diamond T line for 1937 provides, as always, the furthermost advances in the industry. New "high-output" engines with heat-resistant cadmium-nickel bearings offer one of many examples.

DIAMOND T MOTOR TRUCKS have *earned* the world respect they enjoy!

. . STYLING

Smartness with distinction—never extreme or freakish — has made and maintained Diamond T's style leadership. Most of next year's trucks will resemble the Diamond T of today . . . a statement with 25 years of history to support it. From ¾ ton to 10 tons—low in price—four and six-wheel models.

DIESEL

A NEW DAY DAWNS IN
high-speed, high-mileage hauling!

New Diamond T Models
with 6-cylinder
DIESEL POWER!

- ✓ *Model D 20;* gross capacity 14,000 pounds; nominal rating 2-3½ tons. Six-cylinder, 77 horsepower, 260 cubic inch, Diesel engine.

• •

- ✓ *Model D 30;* gross capacity 17,500 pounds; nominal rating 2½-4½ tons. Six-cylinder, 86 horsepower, 298 cubic inch, Diesel engine.

• •

Other Diamond T Models, gasoline-powered, in a complete line from ¾ to 10 tons capacity

DIESEL economy is simple arithmetic. The Diesel engine uses much less fuel and Diesel fuel *costs less* than gasoline. Older Diesel engines have been far too big and heavy. They were not suited to the very work where Diesel economy counts most — high-speed, high-mileage hauling.

Diamond T now offers two new trucks — a 2-3½ ton and a 2½-4½ ton model — with 6-cylinder Diesel engines which are no larger than the average gasoline truck engine, and are actually simpler in design.

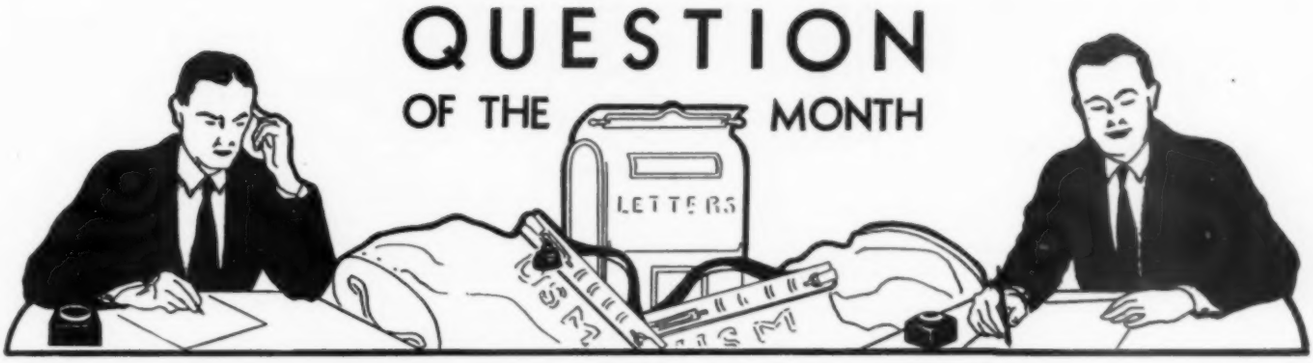
Furthermore, these new Diamond T Diesel models have the famous fuel-saving Diamond T two-speed rear axle — an additional economy factor of proved value. On distance hauling, fuel savings run from two-thirds to three-fourths — and operating expense is reduced accordingly.

For complete details, see your Diamond T dealer or write—

DIAMOND T MOTOR CAR COMPANY
Chicago, Illinois

DIAMOND·T

QUESTION OF THE MONTH



Fleet Practice *with Reference to* Mufflers

(Here's How You Can Get the Complete Picture on this Controversial Subject:)

THIS month we are taking up the subject of Muffler Service. The questionnaire below is the only practical means that we can employ to gather the necessary data from all sections of the country at one time. It is the first step!

In order to receive the complete data which this questionnaire will bring, it is necessary that you participate in our survey, by tearing out the blank, filling in the answers to as many questions as you can (or as you care to) and mailing it back to the Editor.

In return for a few minutes of your time, you'll get a private and personal copy of the summary, giving a representative picture of the subject under discussion. Your name is never mentioned in these surveys. Thanks, a lot, for your cooperation.—H. C. F.

(Please tear out and mail to The Editor, The Fleet Owner, 90 West St., New York City)

Question No. 77—Muffler Maintenance

Do you replace mufflers at regular intervals, or do you delay replacement until mufflers blow out or rust out? (Please check below)

☐ Replace at regular intervals; ☐ Replace only when muffler fails.

If you replace at regular intervals, how often is this done? (Time or mileage) .....

What is your most common cause of muffler failure? (Please check below)

☐ Rusting-out; ☐ Blowing-out; ☐ Carbon-clogging; ☐ Noise; Others? .....

What is the average life of a muffler in your fleet? (Please indicate mileage or time period)

On light-trucks..... On heavy-trucks..... On pass. cars..... On buses.....

Do you maintain a periodic inspection-system for mufflers?..... If so, how often?.....

If so, what special equipment is used for testing mufflers?.....

When replacement is necessary, what particular practice do you follow? (Please check below)

☐ Use standard-equipment muffler ☐ Use larger muffler. ☐ Use better muffler
☐ Use any muffler that fits. ☐ Use cheaper muffler. Others? .....

What is your source of supply on replacement mufflers? (Please check below)

☐ Vehicle manufacturer or dealer. Others? .....
☐ Automotive jobber. .....

Which type of muffler do you prefer? (CONFIDENTIAL) ☐ Cup or sectional type; ☐ Rolled steel type.

What MAKE of muffler do you prefer for replacement? (CONFIDENTIAL) .....

Do you replace as many exhaust-pipes as mufflers?..... As many tail-pipes? .....

Have you ever been able to trace carbon-monoxide difficulties to faulty mufflers?.....

Remarks .....

.....

How many vehicles in your fleet? (Please indicate below)

Trucks ..... Tractors ..... Trailers ..... Pass. Cars..... Buses..... Miscellaneous.....

***Note:** If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.*

Swap your Maintenance experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm .....

Address .....

City and State .....

Your Name .....*Position*.....

LITERATURE
THAT'S NEW -- *and* FREE!

THE following numbered selections have been chosen by Editor Fischer as this month's trade literature offerings. . . . These booklets are GUARANTEED to be interesting and are offered NOT on the basis of producing inquiries for advertisers, but on THEIR OWN MERITS as handy reference data. . . . If you don't believe it, send for a few of them and prove it to yourself. Do not confuse this page with the voluminous conglomerations found in ordinary (the other fellows') magazines. . . . The coupon is for your convenience. All you need is an envelope and a 3-cent stamp.—H. C. F.

332. "THE DEPENDABLE DIESEL". . . . This latest book on Diesel-power is truly a worth-while "magazine" on the subject. . . . Its 72 pages (9" x 12") are chock-full of "case-histories" and photographs that go a long way to prove the success of Diesel-power in trucks, buses, road-machinery, lighting plants, boats, etc. . . . In addition, the book is a work of art, elaborately gotten up. It's free to fleet men who mention No. 332 on the coupon below.

•

333. COOLING SYSTEM HANDBOOK, . . . Now that Spring is here, it's the logical time to get rid of rust, muck and other foreign material that has been accumulating in engine-blocks and radiators all Winter. . . . No. 333 on our coupon below will bring you a copy of this free handbook which outlines successful, proven methods for safely cleaning cooling systems of all types. . . . As with all things on this page, this literature is a worth-while piece, and there's no obligation.

•

334. WIRING MANUAL. . . . It's quite a trick to know which is the proper size of wire to use for *all* electrical installations on trucks and buses, especially since we are having to install so many auxiliary devices to comply with laws, etc. . . . Here's a handy wiring manual and wiring chart that tries to make you "an expert in a day." . . . It's new and it's free; it surely ought to interest any fleet operator who takes his electrical installations seriously. . . . No. 334 on our coupon below brings a copy promptly.

•

335. CATALOG, SAMPLES. . . . Drivers' uniforms constitute one of your best, walking-talking advertisements. However, you don't have to dress your men up like drum-majors. . . . A line of neat, comfortable and *inexpensive* uniforms especially designed for summer wear, has been called to our attention. There are many styles, suitable for *any* type of business, and the low prices will surprise you. . . . We are securing a number of complete catalogs, together with samples of the actual materials available, so that you can see, price, and compare. . . . No. 335 on our coupon brings you full details, without obligation.

•

336. RIVETING ALUMINUM. . . . There's more to it, it seems, than simply drilling a hole, inserting a rivet and socking it. . . . A 36-page book, entitled "*The Riveting of Aluminum and Its Alloys*" gives you the whole story, tells the proper types of rivets to use in different classes of aluminum alloys and also includes detailed instructions for doing the actual riveting. . . . In addition, it gives data on the various kinds of aluminum rivets available. . . . No. 336 brings a free copy.

337. SPARK PLUG CHART. . . . Here is a handy "heat-range" chart that should guide fleet operators in the selection of the right *type* of spark plug that exactly fits the operating conditions of each engine. . . . It also shows how to remedy either chronic fouling or pre-ignition by simply choosing a different type (hotter or colder) plug. . . . No. 337 brings a heat-range chart, free for the asking.

•

338. CIGARETTE-PAPER TEST. . . . In conjunction with an interesting explanation of the advantages of using colloidal-graphited oils, Acheson has devised a very convincing "cigarette-paper test" which demonstrates certain qualities claimed for this type of lubricant. . . . Number 338 on our coupon brings the complete story on colloidal-graphite and also a sample of the "test." In addition, two of the latest technical bulletins on colloidal-graphite will be sent to you.

•

339. WHEEL ALIGNMENT MANUAL. . . . Bear offers this complete wheel alignment manual that is just chock-full of information and specifications covering trucks and other types of vehicles. . . . A complete catalog of Bear safety equipment is also offered, giving details of their liberal partial-payment plan. . . . Number 339 brings a copy, gratis and without obligation.

•

340. WELDING MANUAL. . . . If you are interested in electric-welding, here is a guide that gives the welding procedure for every essential problem in metal fabrication and repair. . . . It tells how you can weld the great variety of metals and alloys encountered in the everyday work of fleet shops. . . . Number 340 brings a free copy of this welding manual. . . . Just mark it on the coupon, if you want this.

•

341. FITTING THE TRUCK TO THE JOB. . . . Here is an interesting book of 24 pages (8½ x 11) that aims to acquaint you with many important points in selecting the right *type* of vehicle for any purpose. . . . Some of the things it covers are: cab-over-engine applications; mounting fifth-wheels for trailers; problems of load-distribution; mounting bodies on chassis; and others. . . . There's not a line of advertising in this free book which you can have by merely indicating No. 341 on our coupon.

•

342. TRUCK TIRE DATA BOOK. . . . Mostly all of the leading tire makers issue handbooks of this kind. The one we have in mind is Goodyear's which is a 36-page, pocket-sized handbook, the object of which is to help you select the proper *type* of tire for each job. . . . Besides listing all data pertaining to the complete line of tires made by Goodyear, the handbook gives you a wealth of rim and changeover data and also includes a table of weights and measures of various commodities. . . . It comes to you free if you mention No. 342 on our coupon.

The Editor, FLEET OWNER, ... 1937
90 West St., New York, N. Y.

Kindly send me without cost or obligation the following literature mentioned in the April issue. (Order by number)

....

....

Name of Fleet .....

Address .....

City and State .....

Your Name ..... Position .....

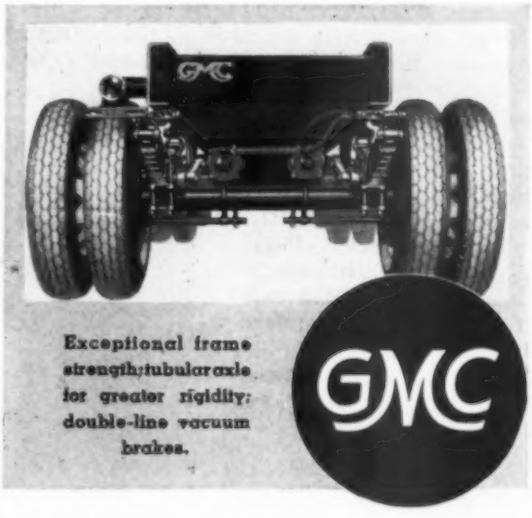
Number of Vehicles Operated (Total) .....

Matched FOR THE JOB

. . . *for more profitable* TRACTOR-TRAILER OPERATION

You can buy a GMC trailer or a GMC truck-tractor with complete assurance of exceptional performance and economy. And when you buy both the trailer and the truck from the same reliable source, you safeguard still more your investment in transportation equipment. Both trailer and truck are "truck-built" to match each other. Body width matches clearance space behind cab, wheels are interchangeable, the same wearing parts are used, materials are of the same high grade and are submitted to the same rigid tests and manufacturing standards. Designed and built as a unit . . . sold and financed as a unit with no division of responsibility . . . Balanced design and construction throughout . . . Serviced at the same efficient, reliable source . . . Both GMC trucks and GMC trailers priced extremely low on any basis of comparison . . . Definite assurance of more profitable tractor-trailer operation.

GENERAL MOTORS TRUCK & COACH
DIVISION OF
YELLOW TRUCK & COACH MANUFACTURING COMPANY, PONTIAC, MICH.



Exceptional frame strength; tubular axle for greater rigidity; double-line vacuum brakes.

GMC

GMC TRUCKS *and* GMC TRAILERS

MACK Model EQ chassis, rated at 23,000 lbs. gross, showing deep frame, rubber shock insulated spring suspension and modern treatment of cab, hood and fenders.

Two Medium-Duty Jobs Announced by Mack

TWO new models, the EM rated at 20,000 pounds gross, and the EQ rated at 23,000 pounds gross, have just gone into production, according to announcement from Mack Trucks, Inc., New York, N. Y.

TRUCK and tractor are offered in each of two new models, known as EM and EQ and rated at 20,000 and 23,000 lbs. gross . . . Four standard wheelbases are available for the trucks and three standard wheelbases for the tractors.

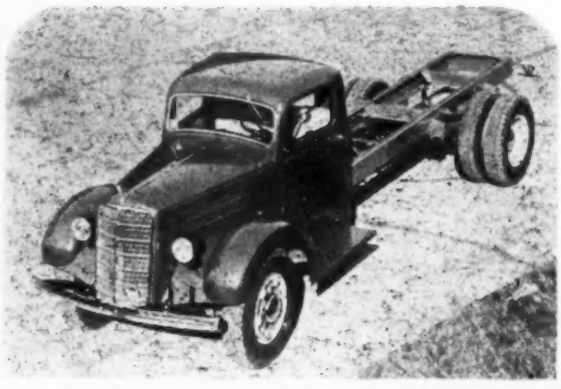
In the modern streamlined styling of the two new models, Mack has carried out the same general design introduced last year on the EH, an 18,000-pound gross model which proved quite popular in 1936.

Fenders are full-crowned and creased, with high valleys between the fenders and the hood. Radiator grille is chromium plated, V'd, and sloping. Chromium plating is also used extensively on the windshield frame, louvre trimmings, hub caps and bumpers.

Adding to the modern appearance of the new trucks are deluxe, streamlined cabs with sloping windshields, the angle of which is repeated in the radiator grille and louvres to form a harmonious blending of lines. Cab roof is of all-metal construction built integral with the cab. Safety glass all around is standard. Interior fittings include dome-light, coat-hooks, and indirectly-lighted instrument-board with clock-type instruments.

Models EM & EQ are offered in four standard wheelbase lengths from 146 inches to 194 inches for the trucks; three wheelbases from 141 inches to 158 inches on the tractor.

The Model EM is powered by a six-cylinder engine with 3⅝-inch x 5-inch bore and stroke developing 79 h.p. at the governed speed of 2,300 r.p.m. Total piston displacement is 310 cubic inches. Model EQ has a 3⅞-inch x 5-inch powerplant generating 92 h.p. at the governed speed of 2,300 r.p.m. with 354 cubic inches of piston displacement.



This view of Mack's model EM chassis, rated at 20,000 lbs. gross, shows the frame that is braced by deep box-girder-type cross-members. . . . Note the cab roof of the integral-metal type.

Among the pointed-out features of both engines are case-hardened, fully counterbalanced crankshaft; exhaust valve seat inserts of Niferrite alloy; Permafit exhaust valves of austenitic steel for prevention of distortion at high temperatures; radiused cylinder bores to prevent cracked cylinders between the bore and the valve deck; cold circulation type thermostatic temperature control, to promote rapid warming of cylinders; offset turbulence combustion chambers which are said to permit high compression without detonation; and case-hardened, nickel-steel timing gears with generator-ground helical teeth.

In both models the drive is from a dry, single-plate clutch through a five-speed transmission which is built as a unit with the engine. Direct drive in fifth, or an overgeared fifth speed is optional. In both models an additional fast reverse gear is available.

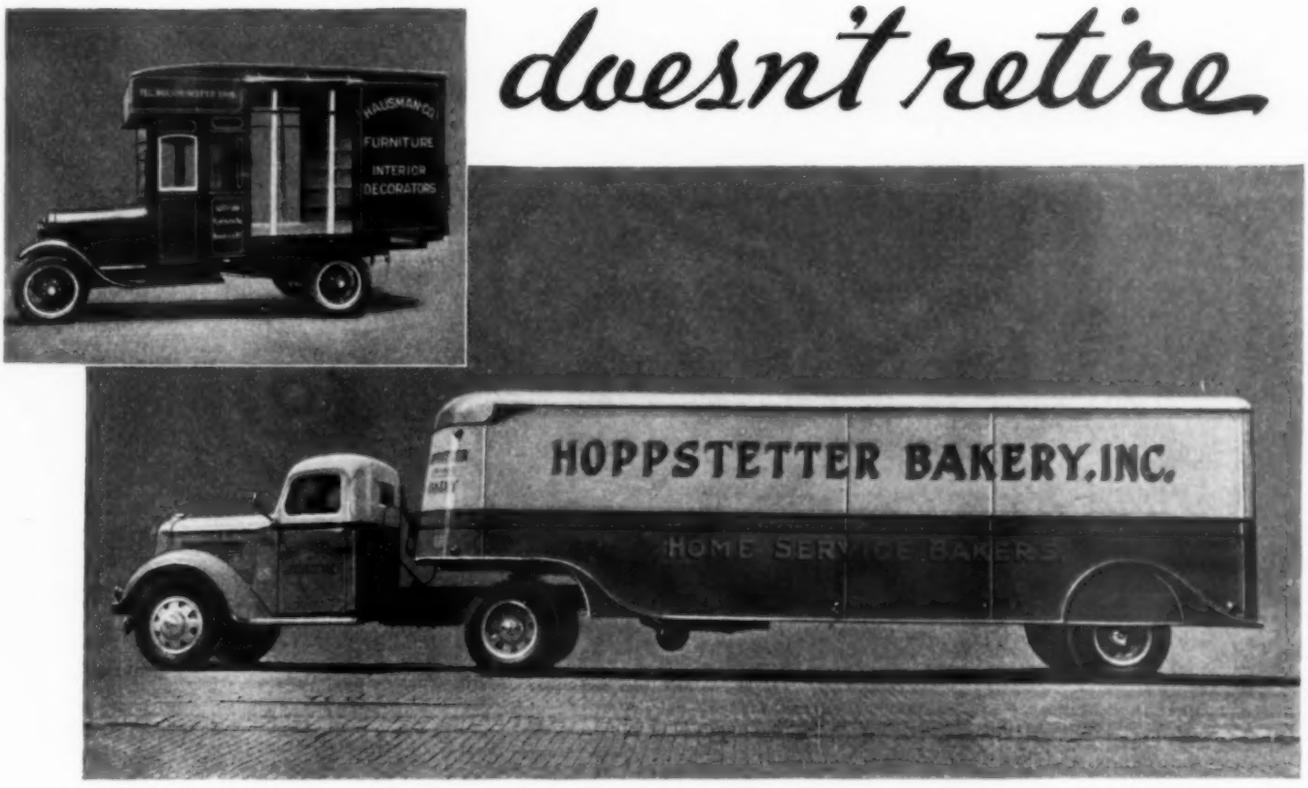
Final drive on the smaller EM is of the single-reduction, spiral-bevel type, with three optional ratios of 5.43, 5.86 or 6.33. On the EQ, Mack dual-reduction drive is used, with six ratios ranging from 6.31 to 9.79. Both rear axles are full-floating and employ Hotchkiss drive.

Four-wheel brakes on the

(*Please turn to page* 75)

PLYMETL

doesn't retire



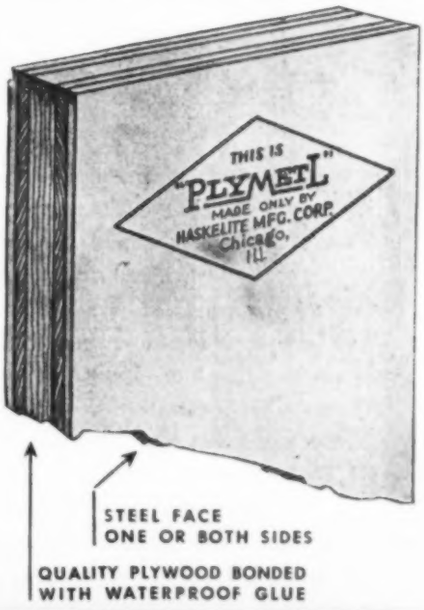
PLYMETL PANELED BODIES MEAN *Better* BODIES

Is it not singular in a world of changing materials that Plymetl is still the "standard" for quality body-building material after nearly a score of years?

Yes, singular, but wholly understandable. Plymetl was specified in both the "old freighter" and the sleek, modern trailer pictured above, for the same reason—because weight for weight it has always been the lightest and strongest panel available; because its smooth metal surface finishes easily and reflects no distorting highlights; because it will outlive the life of its hauling unit with a minimum of upkeep and without burdening the power plant with dead weight. Plymetl panels are often reused on more than one commercial body.

Did you know that 1/4" VE Plymetl (single steel face one side) weighs but 1.4 lbs. per square foot?

WRITE TO US FOR STOCK SIZES AND PRICES



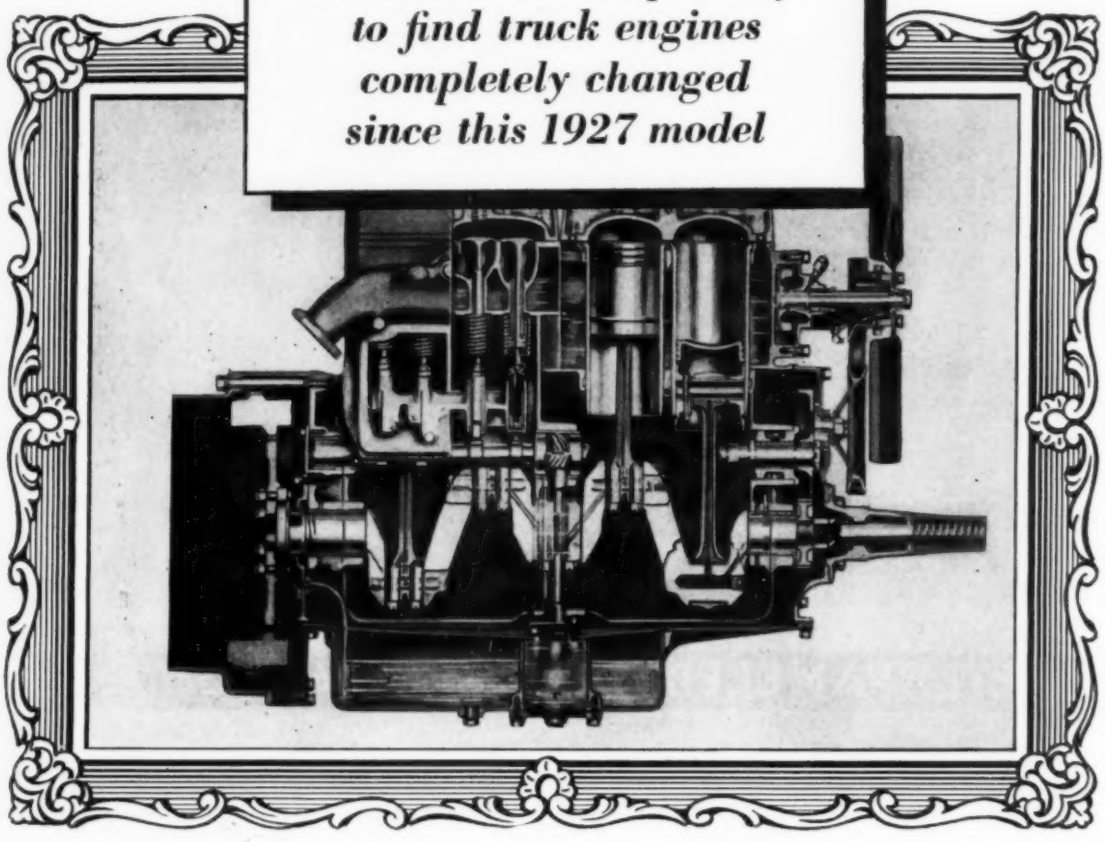
OFFICES IN CHICAGO • DETROIT • NEW YORK

HASKELITE MANUFACTURING CORPORATION

208 WEST WASHINGTON STREET • CHICAGO, ILLINOIS

If Rip Van Winkle

he would wake up today to find truck engines completely changed since this 1927 model



IN Washington Irving's familiar story, Rip Van Winkle, after a 20-year nap in the mountains, returns home to find everything changed. In the truck and bus industry, *everything about engine design has changed in the last 10 years.*

The two pictures above show representative 1927 and 1937 engines. Both are built by the same manufacturer. Both have approximately the same displacement. Both look much alike at first glance. Both are power plants.

BUT—look at these changes! Horsepower raised from 53 to 110! Maximum R.P.M. increased from 1450 to 2300! Compression ratio raised from 3.6 to 1 to 4.75 to 1!

Even more startling is the trend of *all* truck and bus engines since 1927, using an average of all values listed in trade publications. Using 1927 as the base year, horsepower per cubic inch goes up 76.5%, maximum brake horsepower 56%, R.P.M. 46%, compression ratio 22%, while displacement *decreases* 11%.

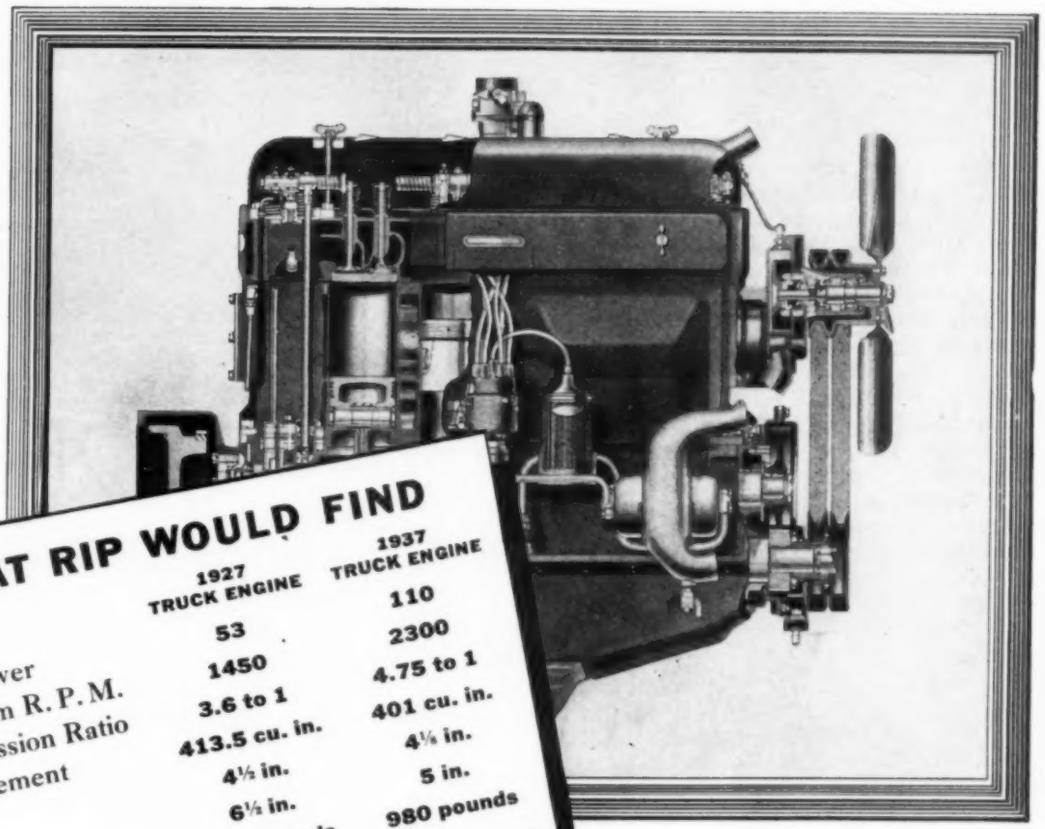
A large proportion of the increase in horsepower has been made possible by the increased anti-knock value and efficiency of fuels containing tetraethyl lead.

Oil companies throughout the country added anti-knock fluid to regular grades of gasoline in June, 1933. Notice the year 1934 on the graphs to the right. See how swiftly horsepower per cubic inch, R.P.M. at maximum horsepower and compression ratio increase.

To the fleet or bus operator, these changes bring faster schedules, larger payloads, more profitable operation,

MODERN TRUCKS AND BUSES NEED THE

had gone to sleep in 1927...

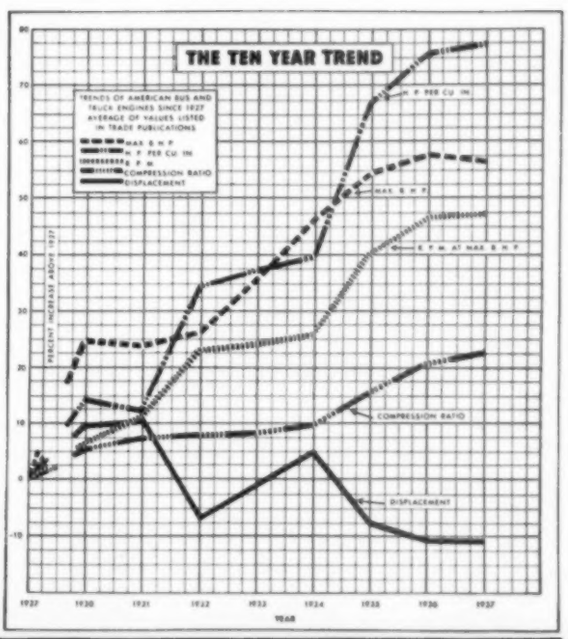


WHAT RIP WOULD FIND

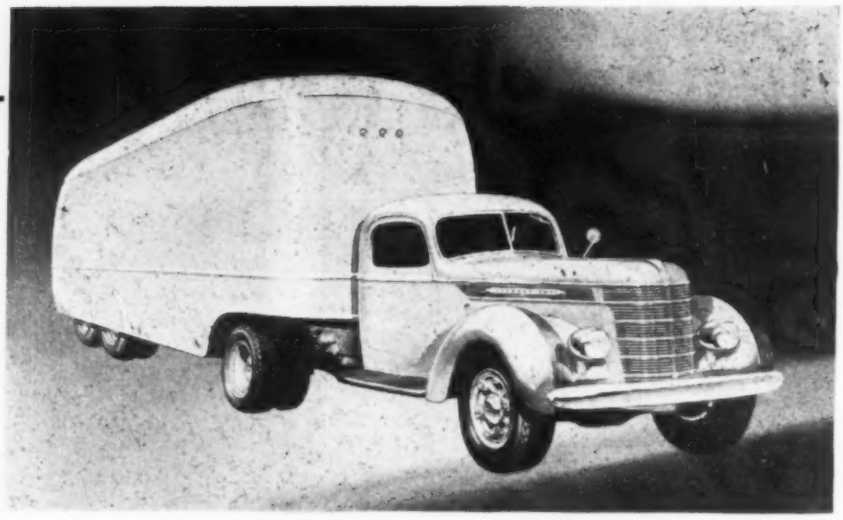
	1927 TRUCK ENGINE	1937 TRUCK ENGINE
Horsepower	53	110
Maximum R. P. M.	1450	2300
Compression Ratio	3.6 to 1	4.75 to 1
Displacement	413.5 cu. in.	401 cu. in.
Bore	4½ in.	4⅛ in.
Stroke	6½ in.	5 in.
Dry Weight	994 pounds	980 pounds

lowered maintenance and repair costs—if he takes advantage of the increased engine efficiency.

If you are now operating trucks and buses that were new within the last three years, they have been designed to give their maximum performance and efficiency on high anti-knock value gasoline. If they are older, you can increase efficiency and performance by using high anti-knock gasoline (containing tetraethyl lead) and installing high compression pistons or heads when they are overhauled. We welcome inquiries about the relation of fuels to the efficiency of your truck or bus engines. Ethyl Gasoline Corporation, Chrysler Bldg., New York, N. Y., manufacturers of anti-knock fluids for premium and regular gasolines.



ADDED POWER OF HIGH COMPRESSION

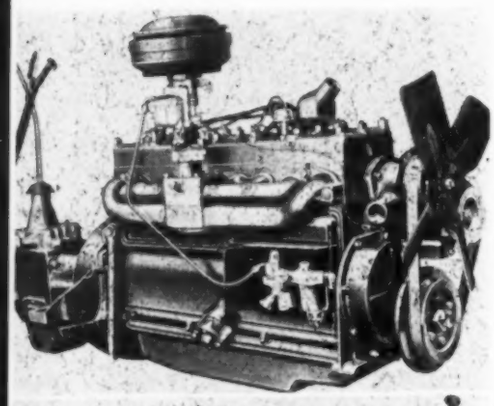


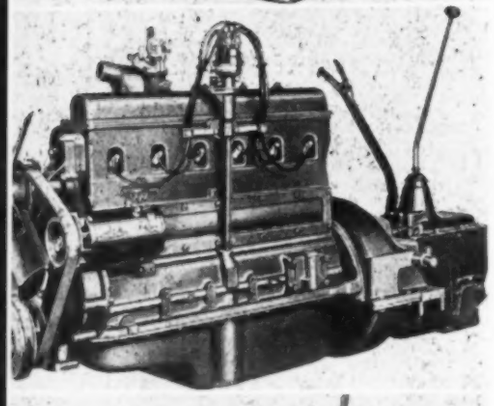
International Offers New, Complete Line

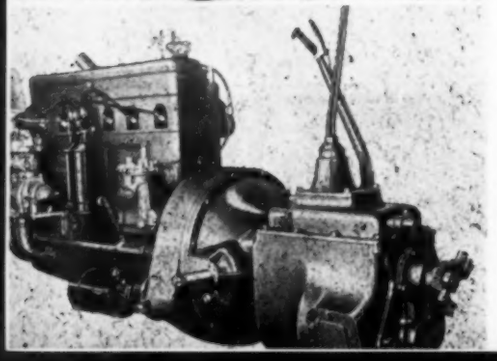
ENTIRELY new line of trucks is known as "D" Series. . . . Twenty-six models are offered on 77 different wheelbases, with gross vehicle weights ranging from 4,400 to 62,000 pounds. . . . Here are the complete details, direct from International's factory engineers:

OF special interest to truck users is the recent announcement that International Harvester has an entirely new line of motor trucks ranging in capacity from light delivery units to large six-wheelers. These new models include conventional four-wheel units, six-wheelers with both dual-drive and trailing axles, and cab-over-engine types. The complete International line consists of 26 models in 77 wheelbases with gross vehicle weights ranging from 4,400 to 62,000 pounds. Full details may be obtained from International Harvester Company, 606 South Michigan Ave., Chicago, Ill.

Powerful truck engines, numerous wheelbases, a variety of rear axle ratios, two-speed rear axles, and multiple-speed transmissions, especially in the heavy-duty models, permit accurate selection, from every standpoint, of the right truck for each specific hauling task, it is pointed out by International engineers.







These new Internationals provide universally standardized (S.A.E.) cab-to-rear-axle dimensions so vitally necessary to body interchangeability, and they also permit mounting of standard bodies of stock sizes. Front axles are set back, and this, together with the relocation of rear axles and cabs, contributes to greatly improved load distribution, not only of body and payload but of gross weight as well. Thus loads on front and rear tires are more uniform, relieving the usually overloaded rear tires by transferring a greater portion of the load to the front tires.

Wheelbases, in conjunction with correct cab-to-rear-axle dimensions, are available to accommodate all lengths of bodies, with the ideal conditions resulting from the use of bodies in even foot lengths. At the same time, bodies in odd foot lengths will permit satisfactory mounting and load distribution on either the next shorter or longer wheelbase.

Many improvements and new features of design and construction have been incorporated in the engines of the International models. Every feature has been fully tested and proved, it is claimed, and all contribute greatly to performance, increased power, and economy, International engineers state.

While greater power has been provided for each of the new models, the engineers state that there has been no sacrifice in the fuel economy. Performance, climbing ability, pulling power, and operating economy are decidedly improved, the official announcement states.

All International truck engines are designed and built for truck service. They are heavy-duty power plants that are claimed to deliver maximum performance at low cost. The types FA and FB valve-in-head engines which power the two-ton and larger Internationals have replaceable cylinders; counterbalanced, vibration-dampened crankshafts; full-pressure lubrication; precision-type, replaceable-shell, main and connecting-rod bearings; hardened exhaust-valve

seat inserts; downdraft carburetion; scientifically-designed manifolds; oil-bath air cleaners; air-cooled generators; and other mechanical features which contribute towards maximum power, performance, long life, and economy.

The HD type "L"-head engines, which power the half-ton and three-quarter ton models, have a displacement of 213 inches and the engine in the one and one-half ton models has a displacement of 232 inches. These power plants have many of the features of the larger engines including counterbalanced crankshafts; replaceable shell bearings; full-pressure lubrication; hardened exhaust valve-seat inserts; downdraft carburetion; mechanical fuel pumps; and oil-bath air cleaners.

In the design of these new trucks International Harvester engineers have given scientific attention to steering and its relation to safety and easy handling. As a result, these new models—due to wide-tread front axles, improved construction, more effective turning ratios, and larger steering wheel diameters—assure a proper degree of maneuverability and safety at low speed in traffic and high speed on the open highway.

In addition to improved appearance, standardization of body lengths, easier handling, and greater power, many new and important features are incorporated in each of the new Internationals. All models have deeper, heavier frames and even more efficient braking systems than in the past, it is declared. Front spring-pad capacities have been proportionately increased to provide for the greater proportion of the load now carried by the front axle.

Clutch and transmission torque capacities have been increased to match the greater torque of the engines. Helical-gear transmissions, with direct fourth speed and fuel-saving overdrive in fifth, which are provided in the larger models, offer many attractive advantages, especially in long-distance hauling. This type of construction enables the operator to maintain high speed with reduced engine speed and with a consequent saving in fuel and oil and reduced engine wear, International engineers declare.

Hydraulic brakes are standard equipment on all International models from the light delivery units to the 4-to-5 ton double-reduction drive Model DR-60. These internal-expanding, self-energizing, two-shoe, hydraulic brakes are said to provide the maximum in stopping-ability for heavy loads. Standard equipment on the larger units includes factory-installed booster brakes of the vacuum-suspended type. Air brakes are standard equipment on the Model DR-70 and the larger six-wheel units. They are available on the medium heavy-duty models if desired.

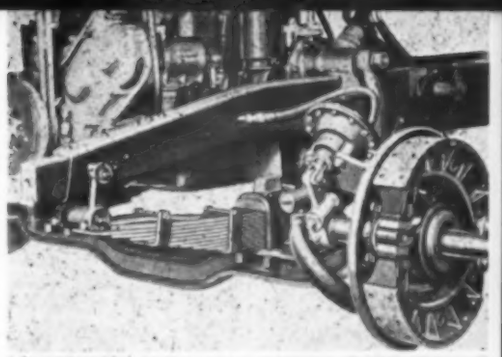
In these new Internationals are other important features of design, such as full-floating rear axles (except in the one-half-ton models); roller-bearing, anti-friction type universal joints; self-aligning propeller-shaft center bearings in the long wheelbase chassis; and many others.

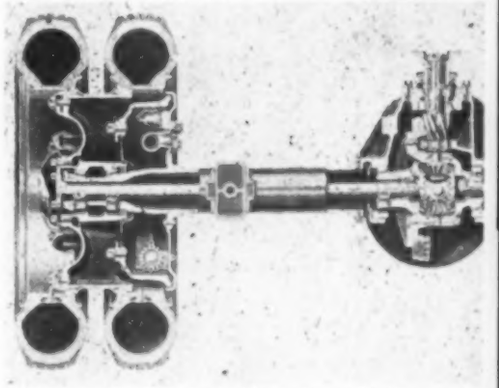
Safety, long life, attractive appearance, and driving comfort and convenience are stressed by the maker in the design of the new International all-steel cabs. Because of the welded, all-steel construction, these cabs offer considerable protection for the driver. Ample room, scientifically-designed seat and back cushions, insulation against the elements, and provision for proper ventilation contribute to driving comfort under all weather and road conditions.

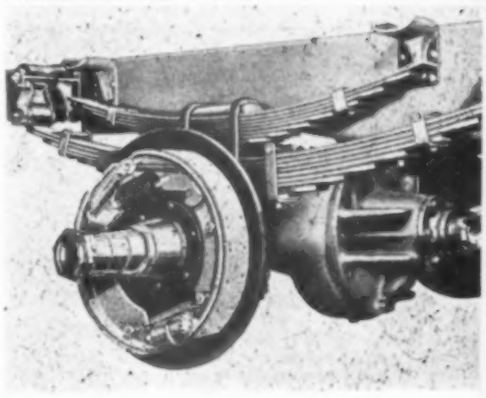
These new all-steel cabs, a direct result of years of experience in truck cab design and manufacture, embody many desirable features. They are roomy, providing ample leg and head room for the largest driver. Seat and back cushions are deeply upholstered and are adjustable. Wide doors permit easy entrance and exit, and all controls and instruments are located for the convenience of the driver. The sloping, V-type, one-piece, clear-vision, ventilating windshield and the large cowl ventilator assure ample ventilation, it is promised.

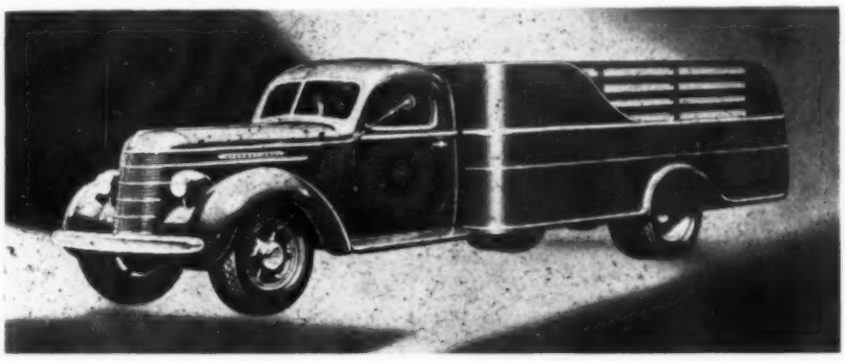
International de luxe panel bodies are beautiful, streamlined, of large capacity, and rigidly constructed for safety and long life. In these welded-steel bodies large-size stampings are employed to reduce the number of parts, with a corresponding reduction in the number of seams and joints. These bodies

(*Please turn to page* 67)





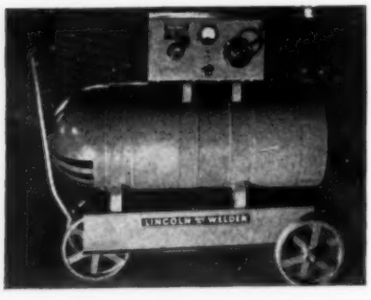




THIS picture shows the new D-35, a 1½ to 2-tonner rated at 13,000 pounds gross. . . . The tractor shown on the opposite page is one of the new D-50 jobs, a 3 to 4-tonner on short wheelbase. . . . Engine views on opposite page are those used in the D-30, D-40 and DR-70, respectively. . . . Axle photographs on this page show, top, air-brake assembly; center, full-floating rear axle that is typical of all models but one; and bottom, a general view showing axle-housing, springs and hydraulic brakes.

"Shield Arc SAE" Welders

A NEW line of single-operator arc-welders was recently announced by The Lincoln Electric Company, Cleveland, Ohio. These new welders



are known as the "Shield Arc SAE" and supersede the type of "Shield Arc" which have been on the market for the last six years.

The feature of this new arc-welder is a new method of arc control which makes possible the adjustment of both arc heat and arc penetration in a continuous sequence of fine increments. It is claimed this continuous dual control assures uniformity of performance at every control setting and adds greatly to the successful operation of arc-welding.

It is a well known fact that for certain types of arc-welding a low voltage with wide range of current control is desired. For other types of work a higher voltage with the same wide range of current is highly desired. These new welders permit the use of the correct voltage and current for all classes of work in the range of each size of machine, it is claimed.

The new "Shield Arc SAE" welder retains all of the other design points of the popular "Shield Arc" models, such as independent excitation, laminated magnetic circuit, all-purpose meter, polarity reversing switch, no voltage motor protection, etc. The base and portable parts have been redesigned for a more stream-lined effect and shorter wheelbase.

The new "Shield Arc SAE" welders are available in the following types and ratings: A. C. Motor-driven—200, 300, 400 and 600 Amperes; D. C. Motor-driven—300, 400 and 600 Amperes; generator for belt or couple service—200, 300, 400 and 600 Amperes; Engine-driven—200, 300 and 400 Amperes.

For further details address Lincoln Electric Co., Dept. WW-332, Cleveland, Ohio. . . . Mention of FLEET OWNER is always appreciated.

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Hall Ridge Reamer

HALL has designed a new type of cylinder-wall ring ridge reamer, illustrated here. The cutter is located behind, and on a direct line with one of the three centering rollers, making it impossible for the operator to tip the reamer and gouge the cylinder-wall, it is claimed. Another advantage is that this location of the cutter also prevents chips and cuttings from

dropping onto a roller and becoming embedded in the wall.

The long square driver furnished with this reamer raises the ratchet wrench well above the tops of the studs and eliminates the possibility of the operator skinning his knuckles thereon, it is also pointed out.

As the reamer is turned, it automatically feeds to the top of the cylinder. Feed is calibrated from zero to two inches and permits removal of ridges to a depth of two inches. Adjustment is made through Vees in spider collar at top of reamer body. A locking screw keeps the setting positive and prevents changed settings on account of vibration. This also makes it unnecessary to re-set the cutter for cylinders of the same diameter. Cylinders from 2.6 to 4 inches can be handled.

For further details, prices, fleet discounts, etc., address Hall Manufacturing Co., 1620 Woodland Ave., Toledo, Ohio. . . . Mention of FLEET OWNER always helps.

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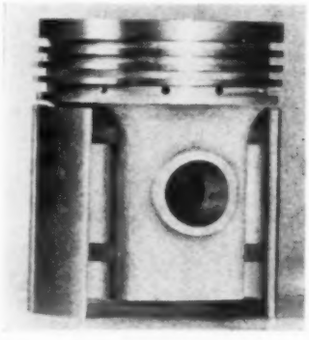
"Steel-Bound" Alloy Piston

A NEW "Steel-Bound" alloy piston is announced by Ray Day Piston Corporation, Detroit, Mich. It is said to be especially suitable for high-duty motors and for Diesel engines, having been under development and test for over two years. The cut-away view shown here illustrates some of the details.

In building this piston, nickel steel bands are cast into the piston, and are tightened after the casting is heat-treated. Curved struts which join the skirt to the bosses are of a predetermined stiffness for each individual piston and are compressed to an exact loading when the bands are tightened to a predetermined tension. The result is a rigid piston.

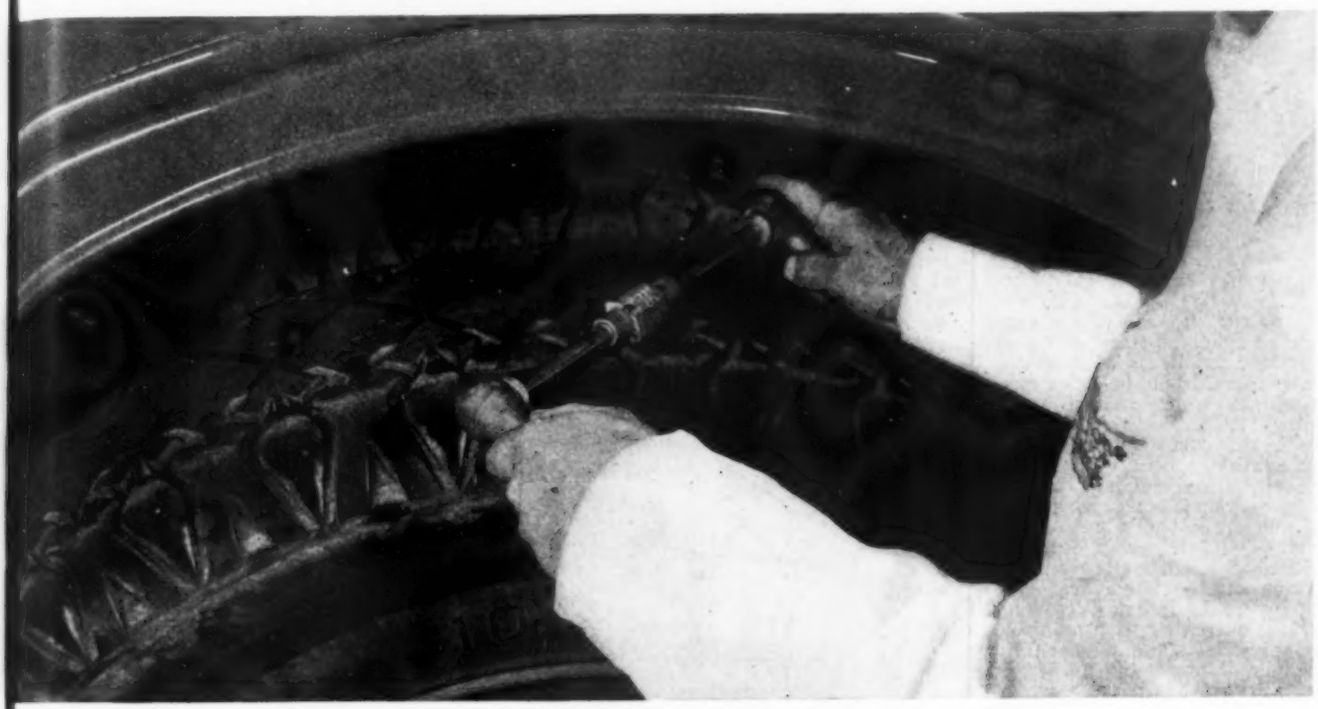
The makers claim that this piston can be fitted at .0005" clearance per inch of cylinder diameter. In other words a 4-inch piston can safely be fitted with .002" clearance, finished round and straight. The ring-lands are said to require less clearance than on split-skirt or flexible pistons. There is no slap when cold because this piston expands and contracts at the same rate as the cylinder, the makers state.



There are other interesting details of this piston that we have not been able to describe here. For blue prints and literature address Ray Day Piston Corporation, 6656 Walton, Detroit, Mich. . . . Mention of FLEET OWNER always helps.

40% MILEAGE SALVAGED
WITH SAFETY
TU-ETH ELECTRIC REGROOVER

The only patented pull type regrooving tool. U. S. Patent No. 1955395



TRACTION

This illustration shows operation with wheel mounted. Faster and better work can be done with wheel dismounted, tire inflated or uninflated.

GO TO work on the remaining 40% tread rubber when the tire is approaching smoothness—give yourself a bargain in mileage plus traction and safety. Do this work with our TU-ETH Pull Type Tool—the tool used by all of the major tire manufacturers now, not two or five years ago. Recommended by them to their dealers. Many fleet operators have sent us repeat orders because of their satisfaction with the tool and the profit from this service.

This month a large user wrote: "We have found it very simple to handle and after trying several makes and types (both hand and automatic) we have found the TU-ETH Tool to be the most satisfactory." Another large company wrote us this week: "We were able to regroove with your tool a 9.75 x 22 tire in 18 minutes—without dismounting the wheel or tire." Another wrote recently: "Your tool works fine —we are doing a fine job in regrooving —please send us another at once."

This is a well-constructed and sturdy tool—easy in operation—doesn't require an expert—any man in your shop can use it—the guide arm and patented construction makes this possible. This construction also provides the most intense heat on the cutting knife. Ten feet of high-grade Belden insulated wire with spring contact plug.

Companies using our tools now

Public Service (N.J.)
Firestone
Goodyear
General
Goodrich
Seiberling
M. Augenblick & Bros. (Unit of Borden Co.)
Gulf Oil
Shell-Union Oil
Krueger Brewery
Essex County
Greyhound Lines
The White Co.
Mack Trucks, Inc.
John Casale, Inc. (Subsidiary U. S. Trucking Co.)
Sheffield Farms

and many others

There are no taped connections—we use fibre. Best grade maple handles. The seamless tube on which the bracket is mounted (see illustration) is gun-barrel steel. Guaranteed not to break under normal pulling power.

The complete tool consists of two interchangeable b r a c k e t s — optional widths—3/16", 1/4", 5/16", 3/8", 9/16" (special 1/8" for General Dual 10)—six Swedish steel knives adjustable for depth to fit each bracket—one sharpening file — case-hardened wrench. Tool complete, with instructions, fully guaranteed, $18.00 net. Immediate delivery. Shipping weight 5 lbs. Parcel Post.

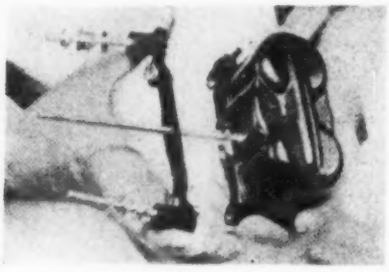
Additional interchangeable brackets in sizes mentioned above, with six knives each, $4.00 extra. Additional knives in all sizes mentioned, $2.00 per dozen. All prices Net F.O.B. Newark. Order direct, or through your jobber. Send check, money order or C.O.D.

VANDERBILT-OSBORNE CORPORATION

RAYMOND-COMMERCE BLDG., NEWARK, N. J.

New Heavy-Duty Wiper

MOTO-CRAT windshield wipers are offered in two standard types—regular and heavy-duty, which, with a few adaptor units, will replace present windshield wiper equipment on practically any automotive vehicle.



The Moto-Crat wiper is of the vacuum-operated type. Instead of using a reciprocating paddle as in standard equipment wipers, it employs two rubber diaphragms which impart alternate motion to a shaft through a "walking beam" arrangement. The rubber diaphragms are made of a special composition rubber that is said to have remarkably long life; a liberal guarantee backs them up.

This windshield wiper is designed for dependable operating service in any position on the windshield—upright or inverted; interior, exterior or concealed; operating with manifold or with individual suction means.

The complete interchangeability of the universal "Moto-Crat" wiper is stressed by the makers. The new heavy-duty model is a big, over-sized job, suitable for installation on the largest and heaviest equipment. It is big enough to "pull your hat off", the makers state. . . . For further details, interesting literature, prices and discounts, address Automotive Equipment, Inc., 22-14 40th Avenue, Long Island City, N. Y. . . . You'll mention FLEET OWNER, won't you?

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Wind Battery Charger

AN auxiliary battery charging unit has recently been announced. It is called the "Hi-Way Wincharger" and is especially designed for automotive use, as shown here.

The specially-designed generator is driven by a metal propeller. The unit begins charging at a road speed of about 22 m.p.h. and reaches its maximum charging rate of 20 amperes at about 40 to 45 m.p.h. A third-brush control is built into the generator, to protect it against overcharging or overheating when driving into strong winds.

Connections may be made directly from the charger to the regular vehicle battery, or a separate battery system can be used with it. This makes possible the use of separate parking lights on trailers, when parked without the tractor.

Advantages pointed out by the maker include: Additional electrical energy available at no cost; Wincharger need not be used if the extra current is not required temporarily; ammeter and relay furnished, as well as baked-enamelled instrument panel for separate installations. . . . For further information address Wincharger Corporation, 2700 Hawkeye Drive, Sioux City. Iowa. . . . Mention of FLEET OWNER always helps.

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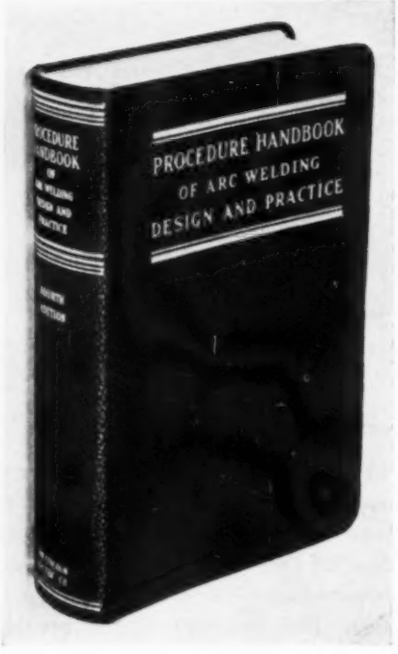
Arc-Welding Hand-Book



HERE'S perhaps the biggest dollar-and-a-half's worth you will probably ever see in your life. It's a procedure hand-book of arc-welding design and practice—819 pages and 990 illustrations. The fourth edition has recently come off the press.

This book is regarded as an authority on the art of electric-welding. It is written in clear, concise style and it answers practically any question you might ask on the subject. It is divided into eight principal parts, as follows:

Part I—Welding Methods and Equipment; Part II—Technique of Welding; Part III—Procedures, Speeds and Costs for Welding Mild Steel; Part IV—Structures and Properties of Weld Metals; Part V—Weldability of Metals; Part VI—Designing for Arc-Welded Steel Construction of Machinery; Part VII—Designing for Arc-Welded Structures; Part VIII—Typical Applications of Arc-welding in Manufacturing, Construction and Maintenance.

The book is printed on good paper and has a semi-flexible binding of simulated leather, gold embossed; size is 6 x 9 inches. It will be furnished for $1.50, postpaid. Address Lincoln Electric Company, Dept. WW-332, Cleveland, Ohio. . . . Mention of FLEET OWNER always helps. (We don't think you can go wrong on this one—Ed.)

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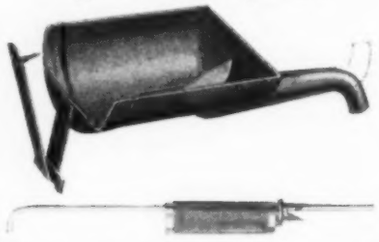
Hypoid Lube Dispensers



TWO new dispensers for canned hypoid gear lubricant are announced by the Huffman Manufacturing Co., Dayton, Ohio. These are the No. 60 Hypoid Pressure Lubricator, and the No. 65 and 66 Hypoid Gravity Lubricators. The spouts of both will clear the lubrication opening of any 1937 car.

The pressure lubricator fits one, two, three or ten-pound cans. The knife cuts a circular opening in the top of the lubricant container, and the pump barrel is sealed to the top of the can by a three-quarter turn to the right. A Duprene rubber gasket surrounding the knife at its base makes this seal leak-proof and long-lived. The curved tip of the delivery tube is inserted in the lubrication opening and pushing the lubricant container toward the car brings the other end of the delivery tube to the bottom of the can. Then the lubricant is delivered by moving the knurled cylinder up and down. This operates a pump, creating pressure which forces the lubricant up through the delivery tube. This lubricator has only one wearing part, the pump leather, which is easily accessible for replacement or oiling.

The gravity lubricator is less expensive than the pressure type, but is reported to be a satisfactory dispenser for canned hypoid gear lubricants. The spout turns axially to reach the lubrication opening in any 1937 car. In use, the spout is inserted in the lubrication opening, in the most convenient position, with the lubricant container resting on top of the dispenser cutting blade. Then, by squeezing the can and the dispenser together, an easy pressure cuts the delivery opening, and a quick tap punches the vent hole in the bottom of the can to assure quick delivery. This lubricator is sturdily built of sheet metal. The No. 65 fits the 1-pound can only, while the No. 66 will accommodate 1-pound, 2-pound, or 3-pound cans equally well.

These new hypoid gear lubricators are available nationally as are the other Huffman products, through automotive and oil equipment jobbers. . . . For further information address The Huffman Manufacturing Co., Dayton, Ohio. . . . Mention of FLEET OWNER always helps.

Pyrene Pressure Extinguisher

A NEW 2-quart vaporizing liquid type fire extinguisher, discharged by air pressure and delivering a fan-shaped spray as well as a solid stream is announced by Pyrene Manufacturing Co., Newark, N. J.

Known as the Pyrene 2-quart Pressure Type, it is recommended for incipient fires in all clases of material and especially for flammable liquids and electrical fires. It is expected that it will find ready use in garages, filling stations, buses, trucks, factories, etc.

Built of copper and brass, the top and bottom castings are fastened to the seamless shell, which is double, forming two chambers. The inner one holds air under pressure; the outer contains fire-extinguishing liquid. Air pressure is renewable at any air-line having pressure of 100 pounds or more.

This extinguisher is 18 inches high and 5 inches in diameter. It weighs 16½ pounds fully charged and is operated merely by opening the operating valve on the top and controlling the combination discharge nozzle. . . . For further details address Pyrene Mfg Co., Newark, N. J. . . . Mention of FLEET OWNER helps.

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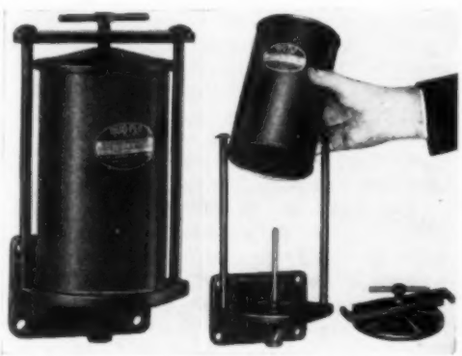
Another Michiana Filter

THE Michiana Duo-Flo Oil Filter with cartridge-type depth-filtering element has been added to the H-W line of filters, produced by Michiana Products Corporation, Michigan City, Ind.

This filter provides similar filtering service as the H-W with Duo-Flo element, except that the complete sealed can is replaceable, as shown



in the accompanying illustration. "Wastex" material is packed in both the upper and lower half of the filter element and oil from the engine divides to pass partly through the lower half and the balance through the upper half.

The makers recommend this type of filter and replacement cartridge for all commercial vehicles when the regular supervision is not always available, because, due to the Duo-Flo design, practically two filters are placed in one container, which increases the capacity and also the mileage between replacements. Ease of replacement of cartridge is stressed.

For further details address Michiana Products Corporation, Michigan City, Ind. . . . Mention of FLEET OWNER, when writing, is appreciated.

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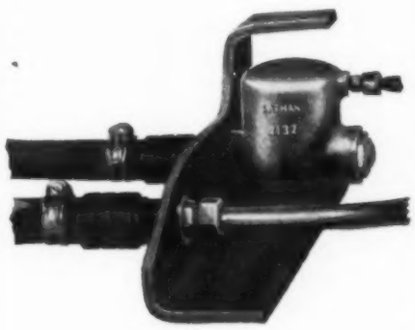
Power-Brake Water-Trap

LATHAN Company, Inc., announces a new water-trap designed to keep water out of the control lines of vacuum power-brakes, and also out of the remote control valves of all types of power braking systems.

As shown in the illustration, the trap is installed in the control line immediately behind the hose coupling and the water is stopped at the very entrance. When the hose is disconnected, the self-draining feature of this water-trap becomes automatically operative.



This water-trap is so designed that the control line is connected at the *top*, where a standard ⅛" pipe-thread is provided for attaching tubing fittings. The top portion of the trap contains a chamber packed with hair, while the bottom has considerable space for holding trapped water. A standard ½" pipe-thread is provided at the bottom for attaching trailer coupling lines.

With the use of this device, the makers point out, a simple and inexpensive means is provided to keep water out of the power-brake system, thus protecting the valves and lines, and assuring proper operation under all climatic conditions. . . . For further details address The Lathan Company, South San Francisco, Calif. . . . Mention of FLEET OWNER always helps.

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Lathan Power-Brake Manual

A NEW edition of the Lathan Power-Brake Manual has recently been issued, which really is a considerably enlarged and up-to-date piece of work.

Said to be one of the most comprehensive manuals of its kind ever written, the new edition is replete with power-brake installation instructions. It contains a large assortment of installation drawings covering packaged outfits, conventional systems and special installations; important mechanical data showing methods of making corrections, alignments, adjustments, etc. There is also a great deal of valuable formulae in it for figuring line pressure of hydraulic brakes; recommendations in connection with vacuum reserve tanks, power chambers, levers, etc.

This complete manual is offered at a price of $1.00 per copy. When 5 or more copies are ordered the price is 75c each. . . . Address Lathan Company, Inc., South San Francisco, Calif. . . . Mention of FLEET OWNER will be appreciated.

•

New Plugs by AC

A NEW line of plugs known as the "AC Blue Top" is announced by AC Spark Plug Company, Flint, Mich., for which are claimed better service, performance, fuel economy and longer life.

The new line of plugs contains only 27 types, as compared with the 82 types of the previous AC line; this establishes a new chapter in AC spark plug history. With these 27 types it is now possible to service all engines —bus, truck, car, marine, industrial, tractor, etc., with a minimum stock.

The "Blue Top" plug gets its name from the blue top of the insulator. Special features of it are: New one-piece, heat-sealed construction; two-step copper alloy sealing gasket; improved center electrode construction; new "isovolt" electrodes; welded side electrode; two-step insulator; extra wide heat range.

The "Blue Top" plugs retail at 65 cents each. An improved and expanded line of "AC Titan" spark plugs is also announced at 40c each list, for those desiring a good plug at a lower price.

For further details regarding these new plugs address AC Spark Plug Company, Flint, Mich. . . . If you mention FLEET OWNER when writing, it will be appreciated.

ALL THESE "TOOLS" WE FURNISH YOU

Managing Trucks on the Basis of **FACTS**

How do YOU manage your motor trucks?

You can, of course, do it by "rule of thumb" and get *some* kind of results. But if you will look over the records of successful truck operators you will find they are keeping close tab on all their expenses, but more and more they are giving attention to *those kinds* of expenses which reflect good or bad management.

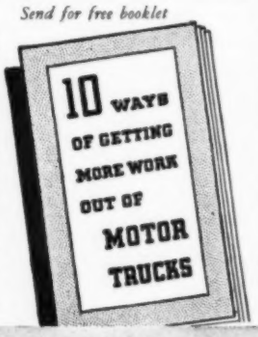
***TIME* Counts**

It's not so much gas and oil which counts, or even the cost of tires, because on these items not much can be done by management; but time spent in the repair shop really means something, time spent loading, time spent delivering, average time per delivery, average speed, total running time per day, etc.—these are all factors which can be *changed* by Management.

These Things MUST Be

shown up before they will receive the proper attention. The *Servis Recorder,* by means of its chart, brings right to your desk every move the truck makes, for 1 day, 3 days or 7 days—showing up all running and idle time, all delays, speeding, overtime, etc.; it is an easy matter to transfer this information to your cost records by means of the "tools" shown above and thus get a *true* picture of your operating expense. *Write for our 40-page Time Record Book—it's free.*

Send for free booklet



THE SERVICE RECORDER CO.
1422 Euclid Ave., Cleveland, O.

The Servis Recorder
Tells Every Move Your Truck Makes

Governor Experiences

(*Continued from page* 30)

note reductions in insurance costs directly traceable to governors, but could not give any definite percentages.

In the matter of reductions in lubrication costs (motor oil, etc.), directly traceable to governors, 23 fleet men reported actual cost-reductions ranging from 5 per cent to 50 per cent. . . . In addition, 35 other fleet operators were also able to note reductions in lubrication costs, but were not able to give any definite figures.

The effect of governors in reducing fuel costs was also quite marked, being stressed by 28 fleet operators who gave percentages ranging from 2 per cent to 30 per cent cost-reduction. . . . In addition, 40 other fleet operators were able to note reductions in fuel costs directly traceable to governors, but were unable to give definite percentages.

In the matter of brake maintenance cost-reductions directly traceable to governors, 25 fleet men gave percentages reporting actual cost-reductions, ranging from 8 per cent to 50 per cent. . . . In addition, 49 other fleet operators also noted reductions in brake maintenance costs, but were not able to give us any figures as to the per cent reductions.

The effect of governors in reducing accidents and accident costs was outstanding, not so much by the number of fleets reporting, but from the size of the percentages given. Seventeen fleet operators reported with percentages on this question, ranging from 5 per cent to 100 per cent cost-reductions. (There was only one 100 per cent fellow, however). . . . In addition, 43 other fleet operators reported reductions in accident costs directly traceable to governors, but were not able to back up their reports with tangible percentages as to the amount of cost-reduction.

We well realize that there are many operators who will think that the idea of getting cost-reductions as high as 75 and 100 per cent, merely by installing governors, sounds somewhat screwy. "If that's the case," think they, "why not let everybody install governors and we won't have any costs to worry about?" . . . All that we have to say in answer to this one is that the figures of 75 and 100 per cent reductions in costs and accidents were mentioned by only a *very few* operators. Maybe their costs were entirely out of line, due to drivers that were entirely out of control—or something like that. . . . We have simply transcribed the figures that the "other fellow" gave us, so please don't discount the value of the entire survey because one or two of the participants *may* have waxed enthusiastic or gone haywire.

The figures, if studied carefully, certainly should go a long way towards convincing even the most skeptical of fleet men that governors are more than worth their salt. We do not like to flavor these articles with even the slightest essence of propaganda, so will leave you to draw your own conclusions. A more detailed breakdown of the percentages given in the preceding paragraphs is contained in our mimeographed summary to the governor question. Fleet operators desiring a free copy of it may have one, in exchange for this month's questionnaire (on page 49) properly filled out. We think that this is a fair exchange, but must limit this offer to fleet operators only, because we want you to know that these "surveys" are made only for the fleet operators' benefit.

And now on to the last of our questions. . . . We asked "*Do you consider governors as a safety device, or as a maintenance necessity?*" . . . According to our findings in this survey, the governor is not *primarily* a safety device, but is more of a maintenance necessity. . . . To substantiate this rather startling conclusion let us present the figures which were obtained in our governor questionnaire. They are: "Safety Device"—12; "Maintenance Necessity"—61; "Both"—80; "Neither"—4; No Answer—23. So there you are, free to draw your own conclusions.

Remarks are always in order on *any* questionnaire, so we obligingly left a blank space for operators to include remarks, if they saw fit. Here are a few of the pertinent remarks made *in favor* of the use of governors, in addition to the many advantages outlined in the tabulations previously given:

"We get police department cooperation when governors are used."

"Governors prevent our drivers from racing cold motors too fast."

"Drivers often like to 'wind-em-up' but governors will prevent this."

"Governors will permit a more definite timing of routes."

"Governors provide a definite check on the 'cow-boy' type of truck driver."

"Maximum speeds are always 'within the law' when governors are used."

"They reduce speed, which also reduces maintenance costs on every part of the vehicle."

"Governors are definitely a safety device when properly installed and when the governor itself is properly designed."

"Find governors make us a good insurance 'no accident' risk, when modern ones are used."

"A governor provides a mighty fine argument in court."

"Governors increase the trade-in value of vehicles."

"So-called 'dis-advantages' of governors are simply a lot of alibis, without foundation."

"Governors prevent drivers from loafing at eating places, etc., and then trying to make up the lost time by over-speeding their vehicles."

"Governors prevent drivers from racing motors to make hills on high gear."

"Governors permit proper management and control of speed, routes, deliveries, etc."

"Mechanical control of speed governs human impulses and attitudes to our advantage."

"Governors contribute towards a direct reduction of ALL maintenance costs."

"Governors sometimes act as a 'robot' driver; provide good protection against reckless drivers."

"Governors result in less brake and drum servicing in our fleet."

"With governors we have better control of vehicles, especially on icy roads."

"Governors needed for drivers having 'heavy' feet; less strain on drivers; less responsibility."

"Governors provide about a 10% saving in general operating costs."

"Governors prevent drivers from 'gunning' the motors in 1st and 2nd speeds; saves gears."

"Governors enable us to gain goodwill by operating at moderate speeds on the highways."

To list the remarks in *favor* of governors, and to neglect, disregard or ignore the remarks made *against* the use of governors, would in itself constitute a very grave sin. Besides, we don't do things that way. So, realizing that we might be climbing out on a limb, so far as our pleasant relationships with the various governor manufacturers are concerned, we are listing in the following paragraphs several of the "objections" raised to the use of governors; these were advanced by fleet operators under the general heading of "Disadvantages." Here they are, for whatever they may be worth to anybody:

"Governors cut out power when needed mostly; not enough power permitted for emergency conditions."

"We have difficulty in convincing drivers that governors only control speed in any gear."

"In hard pulls on steep grades, governors will not let motor get enough gas."

"More accidents, due to drivers getting into speed pockets."

"Governors reduce power and ability. May be dangerous on passenger cars under certain conditions."

"If set too slow, vehicles with governors become a hazard under present driving conditions; do not control speed of vehicles going down hills."

"Any, except centrifugal types, are erratic in action to varying degrees, according to make, and accentuate any power losses from spark setting.

(*Please turn to page* 64)

FOR THAT COOLER PERFORMANCE
ask for
A WEATHERHEAD
B-V ARMATURE··
IT'S
AIR CONDITIONED!
• Accurate winding results in appertures which act like a fan when the armature revolves. Also a complete line of standard armatures.
WEATHERHEAD
CLEVELAND • OHIO

Approved
HEAVY DUTY
Pyrene
FIRE EXTINGUISHER

For years the Pyrene fire extinguisher has met the requirements of fleet operators who want their trucks dependably protected from fire. Pyrene has always represented an investment . . . time-tested . . . in security . . . the most economical buy in the long run.

Now the Heavy Duty type more than meets the requirements of the I. C. C. Regulations for interstate trucks and buses, effective July 1st. Pyrene fire extinguishing fluid will not freeze at 50° below zero . . . extinguisher fabricated from heavy-gauge brass with reinforced side panels. Cushioned construction to withstand vibration — carried in truck type brackets — shock proof — rattle proof.

Bracket for mounting on dash or other convenient location in cab, at no extra cost

Special Steering Post Bracket at slight extra cost

READY NOW . . . ACCEPT NO SUBSTITUTE

Pyrene Manufacturing Company
NEWARK NEW JERSEY
ATLANTA KANSAS CITY CHICAGO SAN FRANCISCO
Fire Extinguishers Tire Chains

errors or other adjustments."

"The governor belongs on the front seat."

"Drivers with governors must learn not to attempt to pass other vehicles going approximately the same speed."

"Loss of power is noted if engine is governed to the point where curtailment of power will not meet with load requirements."

"Manifold type of governors lose their adjustments too easily."

"Cannot use governors in severe rural work, due to limitation of r.p.m."

"Governors are a poor substitute for good driving. They don't slow down for intersections, watch the road obey traffic lights and wouldn't recognize an emergency if it crawled under the hood with one of them. And they curl up and go to sleep on the downgrades."

"If you have good drivers you don't need governors."

"Governors have to be maintained; sometimes they interfere with shifting."

"On high speed engines, such as Ford, governors cut down torque, noticeable on hills."

"Slow get-away in traffic—low and second gears—when governors are used."

"On some governors you can't stop air-leaks, which makes carburetor adjustment somewhat difficult."

"With governors we use slightly more gasoline than without."

"Hard pulls on loose-surface roads cannot be made, as governors kill power."

"Some governors fail to hold vehicle at maximum speed for which they are set."

"Can't adjust governors to take care of ALL conditions."

"Governors prevent getting full motor efficiency under peak loads."

"Drivers have tendency to drive at maximum governed speed."

"Not enough power with governors when stuck in mud or snow-drifts."

"Governors may increase tendency of vehicles 'ganging' on highways, because of inability to pass when desired."

"Governors likely to cause motor trouble and lack of power."

"Governors do not always increase gas mileage. On some cars if throttle is opened with governor cut in, mixture is enriched excessively."

"Occasionally mechanical trouble in governors causes road delays; sticking governors, etc."

"No control of engine speed when speed is close to point of governor operation."

"Vacuum-controlled governors are not flexible enough."

"Governors prevent getting as much start for next hill as one would sometimes like to have."

"Driver not able to blow out motor when fouled up."

And that, folks, is the story on Governors. The 180 fleet operators who participated in this survey are located in 35 states, Canada, Hawaii and Puerto Rico. They are classified in more than two dozen different industries and operate an average of 160 vehicles each, in which are found 17,168 trucks, 1,373 tractors, 1,549 trailers, 7,067 passenger-cars, 936 buses, 512 taxicabs and 189 miscellaneous vehicles.

We will repeat that these questionnaires are conducted solely for the fleet man's benefit. The information in them is "confidential business" and only those who participate in them are really entitled to the "confidential" summaries which follow them. In these summaries you get *all* the "meat"—trade-names, brands preferred, and everything. So why not start out today and become a regular "member" of our Question-of-the-Month Club? . . . The questionnaire is on page 49 of this issue, and there will be a new one every month. So much for that.

As stated previously, we have made a typewritten tabulation of this survey, for easy reference. Copies have already been furnished to those operators who participated in it. We have a few more on hand, which we will be glad to furnish, gratis, to any interested fleet operators who will send this month's questionnaire back

to us, properly filled out, considering it an even exchange. However, if you fill out this month's blank you will also get a summary when it is ready.

These surveys are conducted primarily for the fleet operator's benefit, and if *more* operators would participate, it would please us greatly. All you have to do is turn to page 49, fill out the blank, and mail it in to the Editor. If you cannot answer all of the questions, just answer those you can, and leave the rest blank.

In return for your efforts, we will send you a tabulated, typewritten resumé of all the answers. Many operators have told us that they save these tabulations, filing them directly under the subject discussed, where they will be handy for future reference. This month the questionnaire is on page 49, gentlemen. . . . We'd appreciate your cooperation.

•

Two Lincoln N. Y. Appointments

LINCOLN Electric Company of Cleveland announces two appointments to its sales staff at the New York City office, 330 W. 42nd Street. . . . The men are W. H. Borst, graduate of University of Illinois; and E. A. Webber, formerly with the Company's Chicago office. . . . G. N. Bull manages the New York office.

•

Warns Against Cheap Truck Tires

GENERAL Tire & Rubber Company, through its vice-president, Charles J. Jahant, because of rapidly increasing costs of crude rubber and cotton fabric, warns against the use of cheap tires that might contain substitutes. . . . "Operators." he says, "will find that it is uneconomical to purchase low-grade truck tires and that these types of tires can prove to be very treacherous under present high-speed traffic conditions."

•

Bendix Sales Convention May 25-28

BENDIX Products Corporation, South Bend, Ind., announces that its annual sales convention will be held in the home city on May 25-28, 1937. . . . More than 600 Bendix distributors will attend the convention, coming from all parts of the United States and Canada. A full four-day program will be arranged. . . . A feature will be a complete "automobile show" of Bendix products.

•

Powers Joins Lincoln "Foundation"

THE James F. Lincoln Arc-Welding Foundation, sponsors of the $200,000 arc-welding prize contest, announces the appointment, as assistant secretary, of Edmond C. Powers, who has been engaged for the last three years in technical writing for The Lincoln Electric Company, Cleveland, Ohio.

Los Angeles Truck-Trailer Show

THE annual Truck and Trailer Show sponsored by The Automotive Council of Los Angeles, will be held on April 24 and 25, at the Edison Transportation Yard, 650 South Avenue. . . . This show will be the largest of its kind to be held in the country, it is declared. . . . All latest types of modern highway transportation equipment will be shown, from the largest to the smallest unit; also many accessories. . . . The show is for educational purposes with no charge to exhibitors or patrons. All are invited.

Matt Ury Stages Bosch Demonstration

GENIAL Matt Ury, well-known principal of Auto-Lectric Distributors, 1991 Broadway, New York City, sponsored an interesting fleet meeting last month at the Hotel Empire. . . . More than 100 fleet maintenance men attended and were rewarded with interesting demonstrations and illustrated lectures covering Bosch volt-o-matic generators, magnetos, distributors, etc., and the well-known Bosch fuel-injection system for Diesel and other oil-burning engines. . . . Factory men who contributed their brains towards making this meeting a success included Foster N. Perry, Lee F. Acker and "Bill" Fetherstone.

"WHY ARE OUR TRUCK MAINTENANCE COSTS SO HIGH?"

Three Advanced Types of HOOF Governors

A.C.H. "Seal-Type" Governors . . . protected by the tamper-proof HOOF Seal.

HOOF "Key-Type" Governors . . . speed can be changed only by person having key.

HOOF "Dash-Control" Governors . . . speed can be changed from the dash only by holder of key.

HOOF GOVERNORS WILL SAVE YOU 25 to 40%

Many garage superintendents and maintenance men make the mistake of not specifying HOOF GOVERNORS as a positive means of reducing costs. Thousands of firms are accomplishing a reduction in costs by using HOOF Governors.

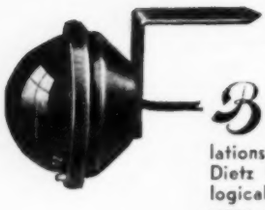
They are modern in every respect, made of aluminum and stainless steel. They will maintain a consistently uniform speed and maximum torque mainly because they are free from all friction and have the permanency of the Cantilever Spring—an exclusive feature in HOOF Governors. Only one working part, which means absolute dependability.

HOOF GOVERNORS are available throughout the entire United States and foreign countries.

HOOF PRODUCTS COMPANY
CANTILEVER GOVERNORS
164 NORTH FRANKLIN STREET • CHICAGO, ILLINOIS

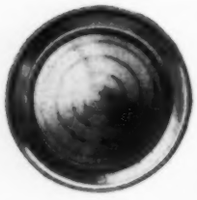
EQUIP WITH DIETZ LITES FOR HARD SERVICE & I. C. C. COMPLIANCE

DIETZ



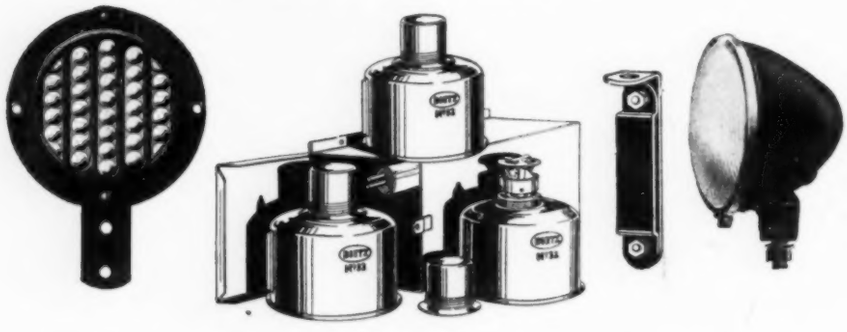
BUY "QUALITY" for Service and Economy. The new I. C. C. Regulations have a permanency that makes Dietz high grade Lites and Signals the logical equipment to stand the hard wear of daily use over a long period.

Dietz Lites and Signals display the modern styling that mates with the newest and best of trucks and buses. They have the structural ruggedness that can "take it."



Your Supply Dealer will be glad to show you Dietz Lites and Signals. You will also find our up-to-date Catalog decidedly useful for reference. Send for a Copy.

MARKER LITES
CLEARANCE LITES
HEADLITES
SEARCHLITES
FLOODLITES
FOG LITES
TAIL & STOP LITES
DIRECTION SIGNALS
REAR VISION MIRRORS
FLARES (POT TORCHES) AND FLAGS



R. E. DIETZ COMPANY, NEW YORK

PIONEER MAKERS OF VEHICLE LAMPS, FOUNDED 1840

HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS
TRUCK FLARES • REAR VISION MIRRORS • FLOOD LIGHTS • CATAPHOTE REFLECTORS • FIRE EXTINGUISHERS

Spray-Painting Fundamentals

(*Continued from page* 42)

It would be well to work out a chart containing a list of all the different types of paints that you would have occasion to spray. After proper testing, list opposite each material the lowest air pressure which you find will best serve the purpose. In any case where an air pressure range from 40 to 60 lbs., for example, would do equally well, always use the lowest suitable pressure, which in this example would be 40 pounds. The reason for using the lower pressure would be to avoid "exploding" the paint more than necessary.

The main function of the nozzle is to mix the air with paint in the correct proportions. Compressed air, when released, has a natural tendency to expand, and the higher the compression, the greater the expansion. Should a higher pressure be used than really needed, there would be a decided tendency to "blast" out of the paint solution the very essential ingredients so necessary to proper flow and leveling action. These essential solvents have been introduced by the chemist, and he definitely plans on their presence in the applied film to insure the results he foresees. If, because of too high an air pressure, such important chemicals never reach the surface being sprayed, then only a rough and sandy, or at best, an eggshell instead of a gloss finish results.

The air pressure regulator also prevents the building up of air pressure in the hose between the times that the gun may be in use.

The oil and water extractor should be given consideration in the same manner that you would consider any form of insurance. Be sure that it does what you expect it to do, and remember that dirt, dust, rust, scale, water and oil are among the worst enemies of a good paint job. The very nature of air makes it necessary to provide the means for extracting moisture, because all air contains moisture. And because it is detrimental to lacquer and enamel films, moisture should be separated from the air before it is allowed to mix with the paint. Oil is even a greater hazard to fine work, and the utmost protection should be employed to guard against any possibility of oil passing from the compressor to the spray-gun. By using a good oil and water extractor the painter can extract any such foreign matter which might otherwise reach the nozzle of the gun, and he will thus save himself many hard and expensive hours of repair work.

In short, air is the "prime mover" which predominates the entire paint shop. By means of air the paint is atomized to exactly the right mixture. By means of air the shape of the fan of sprayed paint is formed. By means of air a thin and controlled film of paint is correctly applied. By means of air in sufficient quantity, thoroughly cleaned, thoroughly dried and with suitable pressure, the resultant better workmanship will prove the wisdom of careful planning and selection of equipment.

(EDITOR'S NOTE: In discussing the matter of spray-painting with fleet operators, many have remarked that there seems to be a lack of general information on the subject and have expressed their desire for an article which would present the subject in simple language. We feel, therefore, that this excellent article, prepared by Mr. A. W. Christenson, Detroit Manager for The Binks Manufacturing Company, justifies careful reading by all fleet men who come into contact with spray-painting in any way.—H. C. F.)

•

IHC Executives Meet in N. Y.

F. J. HARMON, manager of the New York International Harvester Branch, was host last month to 70 of the Company's branch managers and key men from all sections of the East. . . . At an all-day meeting at the Hotel Astor, sales and advertising plans were presented, together with a preview of the new 1937 IHC truck models.

The New Internationals

(*Continued from page 57*)

are said to be comparatively light but extremely rigid, since it is the inside construction—the framework—that determines whether a body will stand up and give long service.

International panel body frames are formed with cross-sills, side-pillars and inner panels, longitudinal channel ribs, roof channel rail, and roof bows flanged, braced, and welded into a rigid unit basically tubular in shape. This follows engineering practices found most efficient and desirable in modern aircraft and streamlined train construction.

From the sloping, V-type, ventilating windshield to the gracefully designed rear, these de luxe panel bodies present an attractive appearance. The trim, sweeping lines are further enhanced by a pressed-in belt molding which constitutes the only trim. Designed for efficient loading, these bodies are available in a choice of attractive colors.

The new Internationals have been styled by skilled designers who have applied the principles of modern automotive streamlining in an effective manner. Simplicity and good taste have been incorporated in every detail of hood, fender, and radiator grille design as well as in the attractive all-steel cabs and panel bodies.

Although distinctive beauty has been achieved, there has been no sacrifice either of stamina or accessibility, International engineers point out. The long, parallel louvres, sweeping in almost continuous lines around hood sides and grille, are accentuated by the modern, well-spaced trim. The rounded grille contributes to the sturdy appearance for which Internationals have always been known.

Summing up, the new International line consists of the following models, sizes and capacities:

Four-Wheel Models

Model	Wheelbases	Rated Cap. Tons	G. V. W. Lbs.
D-2	113 to 125	½	4,400
D-5	113 to 125	½	4,400
D-15	130	¾ to 1	6,500
D-30	128 to 173	1½	12,000
DS-30	128 to 173	1½	12,100
M-3	118	1	7,100
D-35	137 to 179	1½ to 2	13,000
DS-35	137 to 179	1½ to 2	13,100
D-40	134 to 176	2 to 3	14,500
D-50	137 to 179	3 to 4	17,000
D-60	149 to 197	3½ to 4½	20,000
DR-60	149 to 197	4 to 5	20,000
DR-70	149 to 197	4 to 6	24,000
A-7	160 to 225	5 to 7½	37,000
A-8	160 to 225	7½	37,000

Cab-Over-Engine-Models

Model	Wheelbases	Rated Cap. Tons	G. V. W. Lbs.
D-300	99 to 117	1½ to 2	12,000
DS-300	99 to 117	1½ to 2	12,100

Six-Wheel Models

Model	Wheelbases	Rated Cap. Tons	G. V. W. Lbs.
D-186-T	173 to 191	1½ to 3½	18,000
DS-186-T	173 to 191	1½ to 3½	18,000
D-216-T	176 to 194	2 to 4	21,000
D-246-T	161 to 215	2½ to 5	24,000
D-246-F	161 to 215	2½ to 5	24,000
D-346-T	161 to 215	3½ to 7	34,000
D-346-F	161 to 215	3½ to 7	34,000
DR-426-F	161 to 233	5 to 8	42,000
AR-626-F	180 to 253	10 to 15	62,000

NOTE: Model M-3 is a special milk truck job. . . . Models DS-30 and DS-35 are two-speed axle jobs. . . . Models DR-60, DR-70, A-7 and A-8 have double-reduction axles. . . . In the cab-over-engine line, Model DS-300 has a 2-speed axle. . . . Among the six-wheelers, the letter T indicates trailing tandem axle; F indicates dual drive, R indicates double-reduction axle; while S indicates two speed axle.

A very elaborate book, 17 x 11 inches in size, has just been issued by International Harvester Company, giving full ilustrated details of all models, bodies and cabs. In addition to giving complete information in a workmanlike manner, this book is a work of art, alive with color, photographs and descriptions.

For your free copy address International Harvester Company, 606 S. Michigan Ave., Chicago, Ill. . . . Mention of FLEET OWNER always helps.

●

Safety School to be Dropped in May

BENDIX Products Corporation, South Bend, Ind., announces that it will hold its annual sales convention durng the month of May, and that it will therefore cancel all Service School activities during that month. . . . Those planning to enroll during the month of May are invited to postpone doing so until June 7th.

PROOF OF TRAILER *QUALITY*

TIMKEN

"T" Series

BRAKE

This simple, effective brake in a trailer's specifications is definite proof that the trailer builder aimed at eliminating brake problems and cutting service costs.

It is rattle-proof, rust-proof, as completely trouble-proof as a brake can be. Timken Adjustable Levers provide twist-of-wrist adjustment.

Designed for Vacuum Power unit or Air Brake operation.

TIMKEN "T" SERIES BRAKE

TIMKEN AXLES D A CO

THE TIMKEN-DETROIT AXLE COMPANY, *Detroit, Mich.*

It's no "crime" to buy TOP FABRIC "on price"!

ON the contrary, it's good business to buy SILVER RAY Top Fabric "on price"—that is, on the basis of the *total price of the TOP,* not merely of the fabric itself.

In the first place, SILVER RAY *was made for tops* —so that it is pliable and workable in an entirely new sense. Furthermore, you not only save time and money in fitting SILVER RAY to the frame, but also in preparing the top for the fabric and in painting the top after the fabric is applied.

Make your own test with SILVER RAY Top Fabric and SILVER RAY Top Dressing. Together, they will assure you of strong, attractive silvery tops that will not crack, leak or mildew. Samples and prices on request.

Important
ANNOUNCEMENT
Hooperwood FIRE CHIEF Canvas (for tarpaulins, merchandise covers, awnings, etc.) has met the rigorous tests of the U. S. Bureau of Standards for fire-resistance that will withstand severe weathering. FIRE CHIEF is also waterproofed and mildew-resistant—and pays for itself in longer wear.

Sole Distributors:
BRIDGEPORT COACH LACE CO.
BRIDGEPORT, CONN
Made by
WM. E. HOOPER & SONS CO.
PHILADELPHIA

SILVER RAY
TOP FABRIC *and* TOP DRESSING
for trucks, trailers and buses

Truck Maintenance in Canada

(*Continued from page* 24)

A selected speaker usually gives a brief talk on some phase of safety or truck operation at each meeting. This may be someone from one of the manufacturers, insurance companies, or a safety official, etc. Following these talks, movies are shown. Harris has a "home movie" set and they take shots of the men at work and in and around the plant. These make interesting entertainment at the meetings. Refreshments usually bring the evening to a close.

In the matter of safety, Harris carries on an educational program designed to make the men safety-conscious. The fact that each man drives "his own" truck also helps to eliminate carelessness. When an accident occurs, the driver is not docked, but it is taken as an object lesson to prevent its re-occurrence. Persistently careless drivers with bad accident records are, of course, not tolerated on the staff.

The whole Harris system fuctions smoothly. The business is carried on with a minimum of delays and trouble; costs are consistently low and plans for expansion are always under way. The extra care and expense lavished on the fleet is well repaid and in this respect the Harris organization seems to be a model for every fleet operator.

(EDITOR'S NOTE: This outline of the Harris fleet and its maintenance practices is based on an interview with James W. Harris made by a representative of the publication, *Bus & Truck Transport in Canada.* Our version of this interview is released through the courtesy of that publication and we are also indebted to Mr. Harris himself for his kind cooperation.—H.C.F.)

SAFETY LIGHTING

THE FLEET'S IN LUCK WHEN EQUIPPED WITH K-D LAMPS!

Foresight and initiative combined with sound engineering and construction practice produce these lamps.

All state requirements are met or anticipated. Your fleet's safely and legally protected.

Write for catalog and new copyrighted lighting chart.

K-D SHO-TURN
Direction Turn Signal

K-D SHO-WAY
Auxiliary Fog Lamp

THE K-D LAMP CO.
CINCINNATI, O.

A Test With Colloidal-Graphite

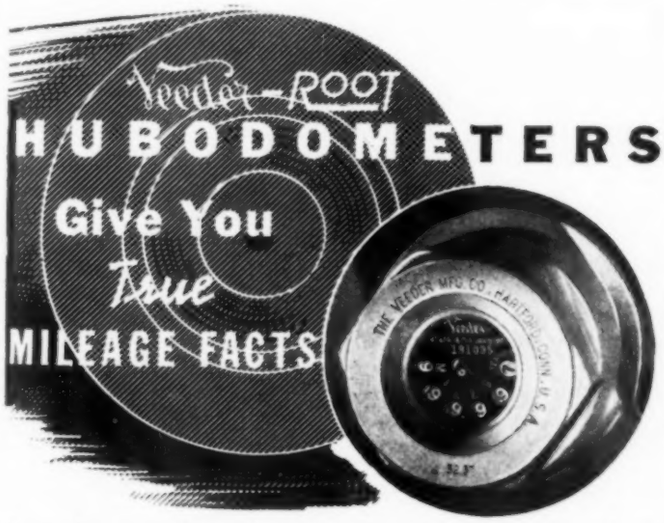
ALTHOUGH many are familiar with the advantages claimed for colloidal-graphited crankcase oil in the reduction of cylinder wear, a test recently carried out by the Research Department of the Institution of Automobile Engineers (London, England) has produced authoritative figures to endorse this view. During the test, two new engines were run and left standing during alternate 15-minute periods. In addition, during the running time, each engine was revved at 1,000 r.p.m. at light load for five minutes, and at 2,000 r.p.m. and a medium load for the remaining 10 minutes.

These alternate running and rest periods were repeated 30 times and the piston rings were then measured. It was found that the wear of the engine lubricated with plain oil was 50 per cent greater than in the engine using oil containing colloidal-graphite.

The tests were continued for a further 150 cycles and measurements again taken. The curves of wear which were plotted as a result of the test showed a clear difference between the two lubricants—the engine with the colloidal-graphited oil showing constantly about one-half the wear, it is claimed.

Piston ring rather than cylinder bore wear was recorded, as this can be more simply and accurately measured. The actual method adopted was to weigh the rings and to check the results by analysis of the metal in the crankcase oil.

Colloidal-graphite, naturally, does not replace the properties of a good oil. What it does is to "take the strain" of lubrication when bearing conditions are most severe, it is claimed. That it can supplement the properties of an oil in this way, especially during running-in, seems to be proved by the I. A. E. tests.



Learn where operating costs can be cut—gasoline, oil, tires, repairs—by getting *true* mileage facts.

Veeder-Root Hubodometers give you these reliable *workable* mileage records, because they can be adjusted to agree to a tenth of an inch with all changes in wheel and tire dimensions. They clock up every mile a truck goes—both forward and backward—and their accuracy is beyond dispute.

Veeder-Root Hubodometers are as strongly constructed as your trucks themselves. *They stand up.* Dust and dirt cannot get inside to cause damage and unnecessary repairs. And tampering is easily detected.

Write for further proof of what these valuable instruments are doing for other fleet owners.

VEEDER-ROOT Inc.
HARTFORD, CONN., U. S. A.

KILLS TRUCK FIRES FASTER

. . . a new small-size extinguisher with a real wallop against fire

IF you're going to protect trucks, here's the way to do it.

Get an extinguisher that acts with real *speed* . . . that puts fires out before they've had a chance to get really dangerous.

Because it's speed that counts, you'll like the new LUX Model Two extinguisher. It smothers blazes, snuffs them out in a fire-killing cloud of LUX carbon-dioxide snow, the fastest known extinguishing agent. This little LUX gives you sure-handed protection against the most dangerous blazes . . . even the dreaded running-gasoline fire.

For sure, fast-moving protection on truck and bus fleets, in garages or on company cars, LUX Model Two is your answer. Fire is a real threat; it can mean an expensive disaster. LUX protection makes it nothing more than a slight incident.

Let us show you the LUX Model Two in action. A LUX representative will be glad to arrange a demonstration for you and your drivers.

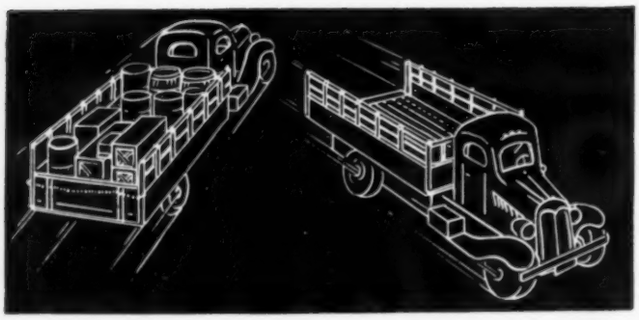
Walter Kidde & Company
420 West Street Bloomfield, N. J.

Write for new folder, "INSTANT DEATH TO ANY FIRE."

• • •

● Out in 3 Seconds! *Stop watch proves LUX's speed in actual test.*

LUX For Motor Truck and Bus Fire Protection



LOADED OR EMPTY—

The Same Soft Ride With Cle-Air Shock Eliminators

● Say good-bye to broken springs, damaged cargo and shock-worn trucks and drivers. Cle-Air Shock Eliminators—for rear-end installation—make trucks operate softly and smoothly *regardless of the load.*

Impossible? No—because they operate on *compressed air,* the only known medium that *builds up its own resistance* and handles a 10 pound load with the same resiliency that it handles a 10 ton load.

Cle-Air Shock Eliminators are really three units in one. They function as (1) helper springs, (2) shock eliminators and (3) rebound snubbers. The result of 16 years experience in building compressed air shock units, and the natural companions of Cleco Gruss Air Springs, they merit your attention and investigation.

Join the fast growing list of prominent operators who are adopting Cle-Air Units. *Their cost is surprisingly low.*

The Cleveland Pneumatic Tool Company

Automotive-Aircraft Division

CLEVELAND, OHIO

AIR SHOCK ELIMINATORS FOR TRUCKS BUSSES, AIRPLANES AND RAILROADS

Fire Protection for Road and Shop

(*Continued from page* 34)

And now let's take up the much-talked-about I.C.C. legislation. The Interstate Commerce Commission's safety regulations, applying to all trucks and buses operating for-hire in interstate service, become effective on July 1st of this year. Among the many items of equipment required to be carried on each vehicle under the Commission's jurisdiction are fire-extinguishers. This portion of the I.C.C. regulations reads as follows:

"On every bus, truck, or truck-tractor (coming under I.C.C. jurisdiction) there shall be carried at least one fire-extinguisher of a type inspected and labeled by Underwriters' Laboratories, Inc., under Classification B, and utilizing an agent which does not need protection from freezing. The minimum size is the one-quart size, if of the carbon-tetrachloride type; or the two-pound size, if of the carbon-dioxide type."

There, in a few words is the new law that is effective July 1st of this year. The two fire-extinguishers illustrated on page 32 of this article are acceptable as within the requirements of the I.C.C. There are, of course, several other makes on the market that fall within this classification and may be used. We imagine that many for-hire operators are now busying themselves chasing after this type of equipment, in order to have it on every vehicle by the first of July; the appearance of this article, therefore, should be quite timely. But why wait for legislation?

For many years prior to regulations which made mandatory the carrying of fire-protection equipment, many foresighted fleet operators have recognized the advisability of proper protection in this regard and have equipped each vehicle with a suitable and capable fire-extinguisher. So far as the garages and shops are concerned, it is to be assumed that local ordinances have dictated that fire-protection equipment should be conspicuously placed throughout the buildings, but some fleet operators have fooled themselves here by buying the smallest and cheapest fire-extinguisher that would pass the law, only to find out that it would not put out their fires. Again the foresighted operator has demonstrated his shrewdness by insisting upon the best he could get as the cheapest in the long run.

Some of you who read this will point out the fact that you have a sprinkler-system built-in at your garages. So what? Many small fires can be "nipped in the bud" with the proper type of fire-extinguisher, long before the sprinkler system becomes operative, and thus not only prevent the fire from becoming a large one, but also avoiding much in the way of dollars-and-cents loss occasioned by "damage-by-water." The latter can sometimes do as much (or more) damage as fire can, especially in certain industries such as paper, textiles, food-products, bread, laundries, etc.

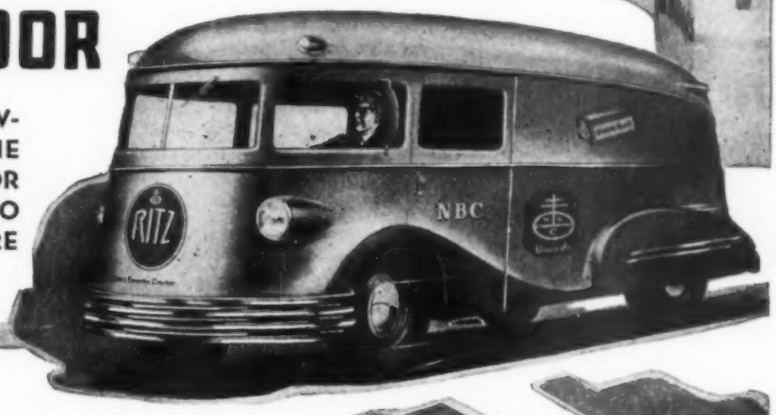
A few years ago this publication conducted a survey on the subject of insurance; fire-insurance was one of the things covered. In 25 per-cent of the fleets surveyed, it was reported that the installation of fire-extinguishers on fleet vehicles had resulted in tangible reductions in insurance costs. So, again, we find that fire-extinguishers are a good investment.

In the matter of local buses, we understand that most states have a strict provision that an approved type of fire-extinguisher be carried, so there is little for us to add here, excepting that the best you can buy is none too good. It may result in saving your bus, sometime, and perhaps several lives as well. . . . Trucks carrying gasoline and other combustibles are in most cases required to carry fire-extinguishers by local ordinances, so we shall skip that subject here. (*Cont. on p.* 74)

MASTERCRAFT TRUCK

THE MERCHANDOR

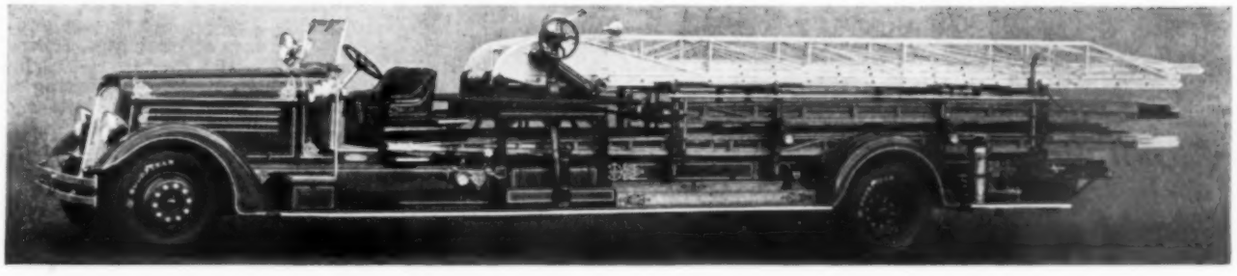
RETAIL AND WHOLESALE DELIVERY WITH CAB-OVER-ENGINE AND ONE-STEP ENTRANCE FOR ALL CHASSIS FROM ½-TON TO TWO TONS. WRITE OR WIRE FOR DETAILS.



IT'S 1937'S BEST BUSINESS GETTER

LUCE MANUFACTURING CO.
LANSING, MICHIGAN

"SEAGRAVE" *Specifies*
BLOOD
UNIVERSAL JOINTS



The Seagrave Corporation of Columbus, Ohio, specifies BLOOD BROTHERS UNIVERSAL JOINTS for its modern fire fighting equipment, where dependability is a primary requisite.

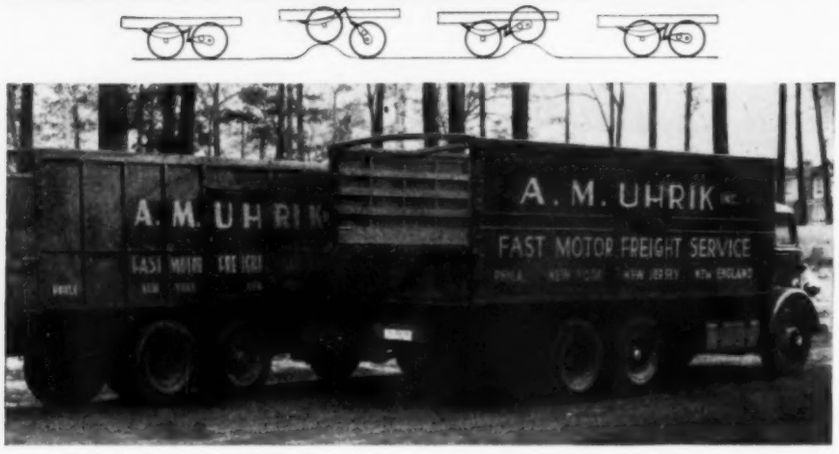
Simplicity of design, ease of replacement and the ability of BLOOD JOINTS to deliver continued service under the most grilling work, these are all factors which have influenced the Seagrave Corporation in its choice.

Our experience of more than 30 years, our ample purchasing and manufacturing facilities place us in a favorable position to understand your requirements also and offer prompt shipping service on all orders.

BLOOD BROTHERS MACHINE COMPANY
ALLEGAN, MICHIGAN

TRUXMORE

WORLD'S BEST 3RD AXLE



"ECONOMIZE as you MODERNIZE"

Recent truck developments, particularly Cab-Over-Engine design, lend themselves to *even more* successful and economical third axle operation.

In this way, leading American Industries are further reducing their hauling costs with TRUXMORE-equipt vehicles—and what's more—Service is Greatly Improved—Safety is Unequaled—First Cost is Reduced 25% to 33-1/3%.

Write to Truck Equipment Co., Inc.
1791 Fillmore Ave., Buffalo, N. Y.
Dept. "B", for your copy of "It's Being Done."

New York
Syracuse, N. Y.
Binghamton, N. Y.
Rochester, N. Y.
Erie, Pa.

1791 FILLMORE AVE.
TRUCK EQUIPMENT CO. INC.
BUFFALO, N.Y.

Chicago, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Boston, Mass.

Fleet Accountant Available (Adv.)

EXPERIENCED Fleet Cost Accountant and Bookkeeper; several years' experience in general public accounting, specializing particularly in automotive fleet work. . . . Four years in large truck fleet having 450 vehicles. . . . Now available on either full-time or part time basis. . . . Cost record systems installed and supervised. . . . Location, metropolitan New York. . . . Further details and references furnished. . . . Address C. C., c/o FLEET OWNER, 90 West Street, New York, N. Y.

•

Sales Representatives Wanted (Adv.)

A NATIONALLY-KNOWN manufacturer of wax emulsions wants to contact salesmen or sales organizations who now have established business connections with the large truck fleet owners, and who are interested in selling, on a commission basis, a new but thoroughly proven protective wax finish. . . . Address WAX, c/o Editor, FLEET OWNER, 90 West St., New York, N. Y.

•

Magnus Chemical Advances Blanchard

MAGNUS Chemical Company, Inc., Garwood, N. J., announces the appointment of David Blanchard as vice-president in charge of sales. . . . Mr. Blanchard has been vice-president of the company for the past fourteen years, in charge of their Portland, Me. office, where he made an enviable sales record. . . . He will supervise the Magnus sales force and direct the merchandising of the company's line of cleaning materials, industrial soaps, sulfonated oils, emulsifying agents and metal working lubricants.

•

Metropolitan Auto Maintenance Show

NEW YORK CITY will be the scene of a Metropolitan Automotive Maintenance Show which is to be staged by a group of wholesalers and manufacturers' representatives in the Port Authority Building, April 21, 22 and 23rd. . . . At this writing more than 60 manufacturers have signed for space. . . . For further details get into touch with Walter V. Hall, 246 W. 65th St., New York, N. Y.

UNIFORMS *for* DRIVERS

(One or One Thousand)

STAR has a Driver-Uniform Proposition that will interest every fleet operator—large or small. Many large fleets, from Coast to Coast, are now Standardizing on Star Uniforms. They are truly inexpensive.

STAR furnishes the name of your firm or your trade mark, neatly embroidered on each Uniform. The fabrics are attractive, durable and INEXPENSIVE! New Summer Styles Now Ready!

Catalog and Samples Yours for the Asking

STAR UNIFORMS ★ 66 VARICK AVE., BROOKLYN, N. Y.

as LOW as $4.60

SPECIAL: Complete special-priced construction sponge rubber cushions (as shown in picture) as low as $4.60. Write for prices on your sizes.

STANDARD: Patented, full-cushion made-to-order Sponge-Aire construction—the ultimate in comfort and economy, available at moderate prices. Write for prices on your sizes.

SPONGE-AIRE SEAT COMPANY, Inc.
BUFFALO, N. Y.

White Enjoys Best Year Since 1929

WHITE Motor Company, in 1936, had the best year profit-wise that it has enjoyed since 1929, while unit sales of White and Indiana trucks and buses surpassed any record established since 1926. . . . The past year, which marked the first full fiscal period under the present management and also the first calendar year with the new volume-production trucks, not only produced a good profit and sales showing, but also materially improved the company's financial position, it is declared.

•

Cleveland Branch in New Quarters

WHITE Motor Company, Cleveland, Ohio, announces that its Cleveland District will move its entire organization—sales, service, parts, accounting, and credit offices,— to new quarters at 1421 E. 49th Street. . . . The move was necessitated by the district's splendid growth under M. H. Anderson, district manager, who increased district business 100 per cent during the past year. . . . The district's new location will provide the latest service equipment, parts and display room for the most recent lines of White and Indiana trucks.

•

Autocar Shows 1936 Sales Increase

AUTOCAR Company, Ardmore, Pa., reports sales for the year 1936 amounting to $11,687,930 as compared with $7,965,822 for the previous year, an increase of 47 per cent, according to a recent report of Robert P. Page, Jr., president. . .. Profit from operations before taxes and depreciation was $639,587, compared with $127,779 for 1935. . . . Net profit was $163,695; the previous year showed a loss of $164,812.

•

Continental Shows January Profit

CONTINENTAL Motors Corporation, Detroit, Mich., announces a net profit from operations of $9,459.-73 for the month of January, 1937. . . For the first quarter of the fiscal year ending January 31, a profit of $39,-248.59 was shown before depreciation of $75,662.46, and a net loss of $36,-413.87 for the quarter, after depreciation . . . This, however, included $15,775.60 development expenses incurred during the period. . . . This is compared to a net loss of $48,003 for the same quarter of 1935-1936.

•

Lathan Company in New Home

REMOVAL of offices and plant to a new location on South Linden Ave., South San Francisco, Calif., is announced by The Lathan Company, Inc., power brake manufacturers. . . . The Company is now located in their own modern building which has every facility for increased production to take care of their rapidly growing orders. . . . The Lathan-Besler Power Brake Manual, just issued in complete and up-to-date form, is available to fleet operators on request. . . . Mention of FLEET OWNER is appreciated.

ASI Show Again to be Held in Chicago

THE 1937 Automotive Service Industries Show, jointly sponsored by the M. E. W. A., the M. E. M. A. and the N. S. P. A. will be a six-day event, Monday, December 6, through Saturday the 11th, at Navy Pier, Chicago, Ill . . . The success of last year's show at the Navy Pier was the determining factor in their decision to again hold it there.

•

Autocar's Net Income for 1936

AUTOCAR announces a net income of $163,695 for 1936, after taxes of approximately 380,000. . . . This net income contrasts with a loss of $164,812 for 1935. . . . The company entered March with the largest volume of unfilled orders in its long history, coming from an exceptionally wide variety of buyers, industrial and individual, in all parts of the country.

•

General Motors' Overseas Sales

SALES of General Motors cars and trucks to dealers in the overseas markets during February totaled 27,-495 units, representing a decrease of 1.5 per cent from the volume in February of last year. . . . In the first *two* months of 1937, however, sales totaled 54,485 units—an *increase* of 1.9 per cent over the volume in the first two months of 1936.

FOR ACCURATE TIRE PRESSURES

No. 6060
Service Gauge

Fleet service schedules require that tires be checked regularly, some as often as three times a day. For this type of work, service men need a tire gauge that can be used almost continually with unvarying accurary.

Schrader Tire Gauges are known for their outstanding dependability. Their minute accuracy is maintained, even in severe service, by the famous "direct-action" principle.

To be sure of maintaining correct tire pressure, even in a road emergency, equip each of your vehicles with a Schrader Gauge. Regularly used, it will pay for itself many times over.

There is a Schrader Tire Gauge for your particular requirements. Order from your regular supplier.

A. SCHRADER'S SON, BROOKLYN, N. Y.
Division of
SCOVILL MANUFACTURING COMPANY, INC.

Schrader
REG. U. S. PAT. OFF.
TIRE GAUGES

What does it COST

to

STOP?

Crowded highways place a premium on quick, sure, safe stops. Cemcalloy Heavy-duty Brake Drums pay for themselves over and over again by:

1. ***Wearing several times longer than ANY others.***
2. ***Reducing time-out for replacement and repairs.***
3. ***Insuring safer operation and enabling drivers to maintain road speeds and schedules.***

Write for information about Cemcalloy Brake Drums for your fleet.

CHRISTIANA MACHINE CO., Christiana, Pa.

CEMCALLOY
Heavy Duty BRAKE DRUMS

for POWER STAMINA and ECONOMY buy Burch

The Burch "Hydromotor" has power to raise and lower the load with equal ease. It is fast and powerful. Locks automatically—any position. Only one moving part — no exposed working parts — no gears — no oil lines. The "Burclift"—a powerful piston hoist is available for those who prefer the conventional type.
BURCH BODIES both contractor, coal and garbage are unusually sturdy in construction.

It will pay you to investigate Burch

BURCH
DUMP BODIES and HOISTS

THE BURCH CORPORATION
Write for Literature
CRESTLINE, OHIO

Fire Protection for Road and Shop

(*Continued from page 70*)

When it is recalled that over 20 per cent of the fire alarms responded to in New York City are for the purpose of extinguishing automobile and truck fires, the necessity for proper equipment (and for articles such as this one) can well be realized.

Lest this article appear as having even the slightest essence of propaganda in it, may we assure you in advance that this is *not* our purpose in presenting it. After considerable study, investigations, hearings, etc., the Interstate Commerce Commission has made its ruling, which, in the minds of many fleet operators, might well be extended by *all* state legislatures to include all types of commercial vehicles, whether operated privately or for-hire. True, you might be tempted to tell us that this would result in a fine piece of business for the fire-extinguisher manufacturers, and that it might impose a hardship on certain types of fleet operations. To which we say, *any* type of fire-protection that will really *protect*, is cheap at twice the price. And then there is the matter of probable insurance premium reductions which should not be overlooked.

After all, it is *your* equipment and why should anyone care (excepting perhaps the insurance man and the income-tax collector) if you burn it up or not? Maybe you never have had a fire in your life. But that doesn't say that you won't have one tomorrow. So again we say, the wise fleet operator will not wait for compulsory legislation, but will equip as a matter of safety.

Models are now available that are compact, easy to install, and take up little room. Inside of the cab is the logical place to install them. Brackets have been improved so that vibration will not affect them and fire-extinguishers can be mounted either vertically or horizontally—lying down or standing up. There is even a steering-post bracket available, so that the fire-extinguisher can be mounted on the front of the steering-post, out of the way, yet always ready for instant use.

Naturally, in the mad scramble that for-hire fleet operators will make to equip before the I.C.C. deadline —July 1st—price considerations are likely to become of great importance. Might we suggest that not only the original cost per unit be considered, but also the life of the unit and its maintenance cost over a period of time. Reputable manufacturers will be only too pleased to cooperate with fleet operators to the extent of demonstrating different units on man-made fires right on your own premises!

We believe that fleet operators will want to study the subject of fire-protection, not only from the standpoint of complying with the law, but also from the standpoint of safety. So, therefore, this article is offered on that basis. In conclusion, be sure that the fire-extinguisher which you ultimately choose for your vehicles or shops, will definitely put out any and all fires that may occur therein. . . . And may the best salesman win!

●

Jack-Knifing Can Be Prevented

(*Continued from page 39*)

1, 1937 by motor carriers, brakes must be used on *all wheels* of all combinations of units, the I. C. C. has also ruled.

The I. C. C. requirements as to brakes on new tractor-trailer combinations are quoted herewith. This applies only to new vehicles, purchased after July 1st of this year:

"Every motor vehicle shall be equipped with brakes

on all wheels, excepting any full trailer, semi-trailer or pole trailer of a gross weight not exceeding 3,000 pounds; provided, however, that the gross weight of any such full trailer or 4-wheel pole trailer without brakes shall not exceed 40 per cent of the gross weight of the towing vehicle, and that the gross weight of any such semi-trailer or 2-wheel pole trailer without brakes shall not exceed 40 per cent of the gross weight of the towing vehicle when connected to the semi-trailer or 2-wheel pole trailer.

"Every full trailer, semi-trailer, and pole trailer (except those weighing 3,000 pounds gross or less), shall be equipped with brakes of such a character as to be automatically applied upon breakaway from the towing vehicle, and means shall be provided to maintain application of the brakes in such case for at least 15 minutes."

The I. C. C. regulations applying to common and contract carriers' vehicles that are already in service, and which regulations go into effect on July 1st of this year, are perhaps of more pertinent interest at this time. Here they are, for your convenience:

"Every bus, truck and truck tractor shall be equipped with brakes adequate to control the movement of, and to stop and to hold, such vehicle, including two separate means of applying the brakes. If these two separate means of applying the brakes are connected in any way, they shall be so constructed that failure of any one part of the operating mechanism shall not leave the vehicle without brakes adequate to stop and to hold such vehicle.

"Every combination of motor vehicles shall be equipped with brakes upon one or more of such motor vehicles, adequate to stop and to hold such combination of motor vehicles."

(Editor's Note: Mr. G. E. Weaver, the author of this article, is executive vice-president of The Weaver Manufacturing Company, Springfield, Ill., makers of safety testing equipment. . . . We believe that his very generous, unselfish contribution of this article should go a long way towards furthering safety on our highways and the elimination of such accidents as these, which are truly avoidable, if proper measures are taken. . . . One of the things which Mr. Weaver failed to mention in this discussion is the location of the fifth-wheel and its "bearing" on the tendency towards jack-knifing. . . . With correct location of the fifth-wheel, *ahead* of the center of the tractor's rear axle, the thrust of the load is placed on *all* wheels of the tractor, rather than on the rear wheels only. This tends to minimize jack-knifing and therefore contributes to safe operation.—H. C. F.)

●

Mack Brings Out EM and EQ Models

(*Continued from page* 52)

new models are direct mechanical, of the internal-expanding type and are vacuum-booster actuated. Total foot brake area on each model is 468 square inches.

The chassis frame on both models is of pressed carbon steel. It is 9 1/16-inches deep, 9/32-inch thick and has a 3¼-inch flange. It is braced by three pressed-steel, deep flanged, box-girder cross members, with alligator-jaw attachment to the side members, and two channel cross-members.

Spring suspension is by means of Mack rubber shock-insulators. Houdaille shock absorbers at the front are standard equipment. Mack archimoid steering gear with a ratio of 18 to 1 provides ample steering ease, it is declared.

PLAY SAFE!

KEEP YOUR BATTERIES CHARGED WITH THE GENUINE

HI-WAY WINCHARGER

REG. U. S. PAT. OFF.

Use lights and plenty of 'em, for your own safety and the safety of others. But be sure your batteries have plenty of power to operate all those lights! Put a genuine Hi-Way Wincharger on every truck *and* every trailer! Have plenty of current to meet all state safety laws!

Hi-Way Wincharger is the easiest, most economical answer to your battery troubles. Mounts on truck or trailer easily in a short time. Connects to either truck or trailer battery. Operates in any speed—22 miles an hour or more. Pours a steady flow of current into your battery. Made in either 6-volt or 12-volt size, by the world's largest makers of wind-driven generating equipment. Fully guaranteed.

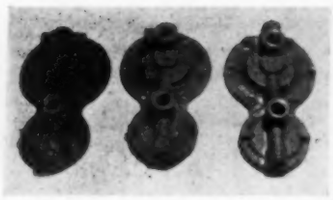
DEALERS! Mail coupon for full details of our attractive proposition!

Ask your Dealer, or mail the Coupon!

WINCHARGER CORPORATION
Dept. FO-4-37, Sioux City, Iowa

Please give me all the facts about Hi-Way Wincharger for trucks and trailers. ☐ 6-volt; ☐ 12-volt.
☐ Let me have your dealer proposition

Name .....
Address .....
City ..... *State* .....
Firm Name .....



This photo tells a story . . .

The photo at the left tells a graphic story of cold tank cleaning of die-castings with MAGNUS No. 78. The pump at the left of the photo is shown before cleaning. The pump in the center, cleaned in a degreaser, shows grease and loose dirt removed, but the hard dirt on top and in the crevices not touched. The pump at the right of the photo was soaked overnight in a cold solution of MAGNUS No. 78, followed by a cold pressure water rinse. ALL grease and dirt were removed. Note clean, bright appearance of the threaded openings. This new Magnus product affords a simple yet most effective method for the cold tank cleaning of such parts.

Write today for our new bulletin on MAGNUS No. 78 and its application to your parts cleaning operations.

MAGNUS CHEMICAL COMPANY
36 South Avenue Garwood, New Jersey

MAGNUS CLEANERS

Blue Book Includes Trucks Up to 3½ Tons

MARKING a notable addition to their contents, the new 104th Editions of the Blue Book and Red Book for use during March and April now carry motor truck listings and valuations up to and including those of 3½-ton capacity, it is made known by the National Used Car Market Report, Inc., Chicago, Ill.

The commercial car section had previously been confined to vehicles up to and including 1½-ton capacities. The decision to add those of the heavier-duty variety, states George A. Leukhart, general manager, was made in line with a policy of improving upon the services rendered by the National Used Car Market Report, Inc., to its thousands of dealer, factory, finance company, bank, insurance firm and other subscribers.

Inclusion of larger trucks takes its place as the third important expansion move made during the past twelve months. The first occurred with the issuing of a pocket edition Blue Book to supplement the pocket edition Red Book and master edition Blue Book. This was followed by the issuing of a Trailer Guide containing listings and specifications.

●

Safe Drivers Receive Awards

FOUR drivers of trucks for the Bristol Brass Corporation of Bristol, Conn., were awarded gold medals recently, in recognition of five years' operation of their vehicles without accident. T. J. Mooney of Hartford, engineer for the American Mutual Liability Insurance Company, awarded the medals in person.

A. D. Wilson, president of the Bristol Brass Corporation, presided at the meeting of all drivers of the company when the presentations were made and paid tribute to those drivers who had completed these enviable records. The gold medal winners are: George E. Seymour, William R. Smedberg, Arthur C. Johnson and Rudolph H. Hummell. A certificate of merit for a single year's record of safe driving was also presented to Gustave A. Carlson and a seal designating a two years' record to Peter Perfetto.

Twenty-three years, in the aggregate, of no-accident driving of trucks was cited as an enviable record for such a concern, especially since most of the trucking is through congested areas in the cities of New York, Newark, and Boston and throughout the state of Connecticut.

SAVE AT LEAST $200 PER YEAR PER TRUCK IN OIL COSTS!

The Horton Motor Lines reports a saving of $200 a year in oil costs on their truck No. 178, equipped with a Briggs Oil Clarifier from the start of its service. The truck covered 110,724 miles in one year, consumed 439 quarts of oil, and *no oil changes were made.* This represents a saving of $20,000 on a fleet of 100 trucks.

Multiply the $200 savings by the number of trucks YOU operate. The lowered oil costs alone . . . to say nothing of reduced wear and maintenance . . . are amazing.

For complete details, write

THE BRIGGS CLARIFIER COMPANY
3260 K STREET, N.W.
WASHINGTON, D. C.

In Philadelphia it's the

HOTEL PHILADELPHIAN
FORMERLY HOTEL PENNSYLVANIA
600 ROOMS WITH BATH FROM $2.50 UP
39th and CHESTNUT STREETS
PHILADELPHIA, PENNA.

Be Sure to Specify
MIDLAND
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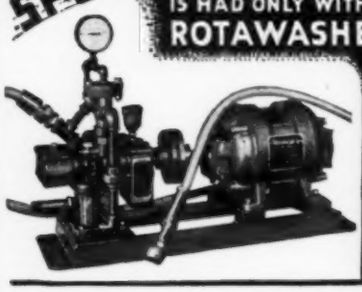
POWER BRAKE EQUIPMENT
●
Complete Kits Available at your nearest Midland Distributor

SPEED WASHING
IS HAD ONLY WITH
ROTAWASHER



—Instantly brings a sharp reduction to your maintenance costs—puts your cleaning on the same rigid economy basis as fleet operation. Send for NEW folder.

THE ROTAWASHER CORP.
Dept. FO. 118 E. St. Clair Ave. Cleveland, Ohio

BLACK GOLD

Specify

MILEY BRAKE LINING

Nine types that not only assure the correct friction but the correct structure and the *best* braking material for each brake.

MILEY BLACK GOLD is the only metal base lining. Dense as cast iron, it is the best for Bendix, Lockheed, Steeldraulic, and Huck brakes—for all "depression year" mechanisms and others that compensate for lack of drum area with extreme operating pressure.

MILEY EBONITE Heavy Duty, a new zinc wire, synthetic resin, semi-molded, that comes in rolls, Sets, and on Miley Ready Lined Brake Shoes. Strictly heavy duty lining—that gives 2 wheel brakes 4 wheel power, and steps up 4 wheel brakes to power-brake performance. The best lining for Fords, Heavy Trucks, and External Brakes.

Write for Samples and Data Book

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1466 S. MICHIGAN AVE
CHICAGO, ILLINOIS

IT'S HIGH TIME TO CLEAN OUT WITH

Sani-Flush

Clean radiators run cooler, save wear and tear, conserve power and avoid costly repair bills. Fleet operators save expense by cleaning out radiators with Sani-Flush. It costs 6c per passenger car (15c for largest trucks, buses and tractors).

Sani-Flush is perfectly safe. Not caustic. Can't harm engine or fittings. Sold in economical 25-lb. pails by grocery, drug and hardware stores or jobbers. The Hygienic Products Co., 218 Seventh Street, Canton, Ohio.

FREE

WRITE ON YOUR FIRM'S STATIONERY FOR A GENEROUS SAMPLE OF SANI-FLUSH. TRY IT. NO OBLIGATION.

THE special honeycomb construction of the Spongex Sponge Rubber Seat Cushion for Trucks and Buses, gives exceptional riding qualities.

The total air space within the cushion is so great, that there is no "packing" of the rubber under the severest shocks. Vibration is effectively absorbed, too. Spongex Cushions have no metal in them—removing all danger of injury. They can be counted on to last as long as the vehicle in which they are installed.

For Prices and Description Address Dept. F

SPONGE RUBBER PRODUCTS CO.
DERBY, CONNECTICUT

LATHAN

LATHAN Power Brake
PACKAGE OUTFITS SAVE YOU MONEY
Write for Prices, Etc.

POWER BRAKE

SIMPLE and effective as railroad brakes. No oiling no greasing, no maintenance. Used for years by largest operators. Complete line. Low-priced Package Outfits. Nation-wide sales and service. Write for FREE Catalog.

Lathan Co., Inc. SOUTH SAN FRANCISCO—Calif. DETROIT—477 Selden Ave.

LITTLE GIANT
AUTOMOTIVE TRUCK EQUIPMENT

HAND HOISTS . . . . in all types

More LITTLE GIANTS in use than all other hand hoists combined. Heavy duty *underbody type*. . . . 2 speeds . . . malleable gears, fully incased . . . bronze bearings. Low-cost *vertical type* . . . single speed. Both dump easily and quickly . . . to 55° angle and return in less than 2 minutes . . . lock at any angle . . . capacity 4 tons . . . easy to install . . . service free. They sell readily to contractors, coal and lumber dealers, factories, highway and sanitation departments, and *farmers*.

Vertical

Underbody

Write for circulars and dealer details

LITTLE GIANT PRODUCTS, Inc.
1535 No. Adams St. Peoria, Illinois

Announces Appointment to Detroit Office

LINCOLN Electric Company, Cleveland, Ohio, announces the appointment of N. B. Gilliland to the sales engineering staff of their Detroit office, 2457 Woodward Avenue. . . . Mr. Gilliland has had 3½ years of university training and one year's experience as Assistant Instructor of Welding at Ohio State University. . . J. M. Robinson is manager of Lincoln's Detroit office.

•

New Folder on Battery Acids

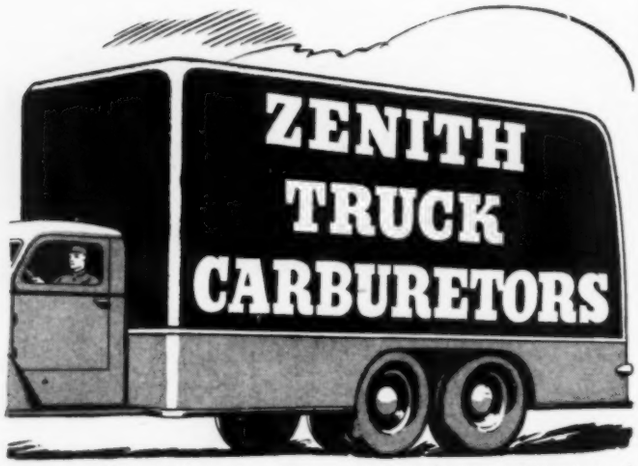
DUPONT announces a new folder prepared by its Grasselli Chemicals Division, which tells many facts about the methods of using electrolyte in storage batteries and the results to be expected. . . . The folder also carries a list of "safety hints" for those handling acids while engaged in battery work. . . . Free copies available by addressing Du Pont, Wilmington, Delaware. . . . Mention of this announcement in FLEET OWNER always helps.

FOR THE OIL GASOLINE & WATER CONNECTIONS

VELLUMOID

Always ready for use—VELLUMOID Gaskets and Sheet Packing stand the gaff of the hardest service. Accept no substitutes.

THE VELLUMOID CO., WORCESTER, MASS.



are built to stand the Gaff!

JUST as you need a special, heavily constructed chassis on your truck, so you need special, heavily constructed carburetors on your truck's engine. A truck carburetor "takes a beating". It must be made to stand the gaff.

Truck engineers know this. And know, too, that Zenith Carburetors have what it takes. So they equip their trucks *at the factory* with Zenith Carburetors!

These world famous carburetors are ruggedly constructed. Their efficiency extends through the whole power range —from idling to open throttle. At any speed, Zenith's power jet system assures maximum pull and power.

In your old trucks—install Zenith Carburetors. You'll notice a world of difference. More economical gasoline mileage . . . stepped up traffic performance . . . maximum power output! Yes and in the new trucks you buy—specify ZENITH!

The ZENITH HEAVY DUTY TRUCK FUEL FILTER also merits your attention. It is not just another screen. It provides engine protection at the lowest cost on record. Installation is easy. Can be cleaned in a few moments. Requires no cartridge—no packing renewal. Send coupon below for full facts.

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CARBURETORS

"Built for Permanence — Calibrated for Performance"

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(Subsidiary of Bendix Aviation Corporation)
695 Hart Avenue, Detroit, Michigan
Send full particulars regarding Zenith Fuel Filters and Zenith Carburetors for following engines:
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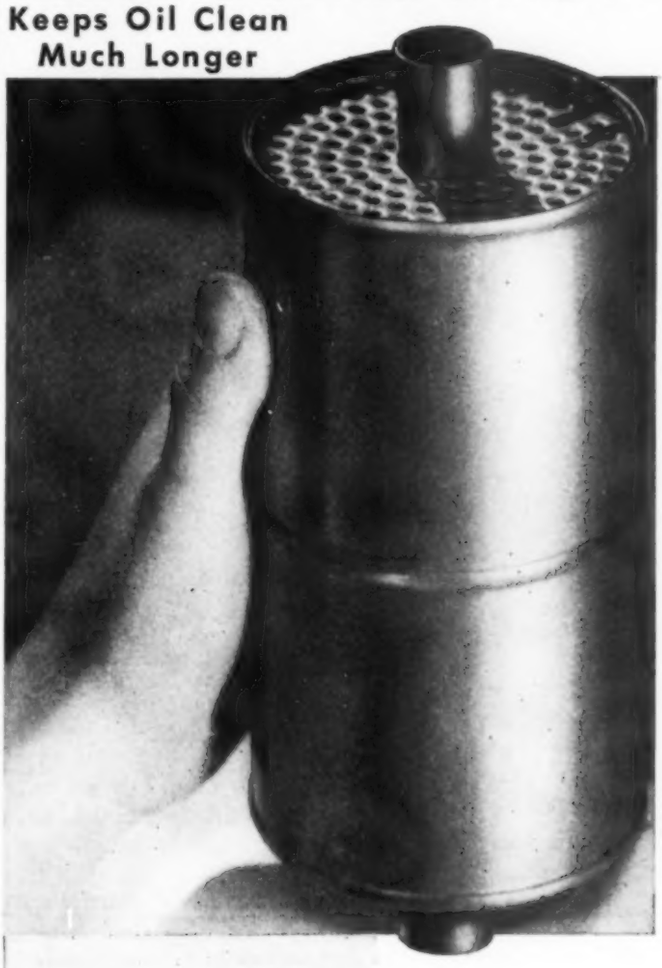
DOUBLE FILTERING CAPACITY

Keeps Oil Clean Much Longer



Removing perforated washers makes replacing with new "Wastex" the work of but a few minutes.

And—So Easy to Service

Just replace the used "Wastex" filtering material with new in both ends of this depth type Michiana Duo-Flo Element and you have a NEW filter at practically no cost. • For two years, engine, bus and truck builders and fleet operators have kept records that have brought such remarks as "Keeps oil clean 5 times longer", "Does perfect job at lower cost", "Needs so little attention" . . .

The Duo-Flo Element is designed to fit all H-W Filters.

The Duo-Flo Oil Filtering element and "Wastex" filtering material have proved their superior performance under all service conditions.

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Get our new booklet, No. 337F, which gives the details of the Duo-Flo principle of oil filtering . . . MICHIANA PRODUCTS CORP., Michigan City, Indiana.

MICHIANA DUO-FLO OIL FILTERS

BRAKE LAWS ARE STRICT

● Brake failure is no excuse in the eyes of the law. In many states, the requirements set by law are rigid.

The Tru-Stop Emergency Brake *more than complies with these requirements.* It is a real emergency brake that will stop a heavy-loaded vehicle smoothly and quickly. When braking pressure is applied, every inch of lining makes contact. The result is positive, powerful braking response without noise, chatter or grabbing. The ventilated discs throw off friction heat and thus prevent overheating.

The Tru-Stop Emergency Brake is easy to install—any mechanic can do it. Little servicing is required. If adjustment or relining *should* be required, any driver can do the work in a few minutes.

Commercial vehicle owners will find it wise in many ways to insist upon Tru-Stop Brakes.

AMERICAN CABLE DIVISION
AUTOMOTIVE DIVISION, BRIDGEPORT, CONN.
AMERICAN CHAIN & CABLE COMPANY, Inc.
Manufacturers of the famous Weed American Bar-Reinforced Tire Chains

In Business for Your Safety

ACCO

TRU-STOP *Emergency* BRAKES

Get the Most out of **MIAMI** *Florida*

IDEAL CENTRAL LOCATION AT REASONABLE COST

Every fine feature of Florida life can be enjoyed, in season and all the year round, at El Comodoro. Entirely fireproof, with steam heat for cool nights, this comfortable hotel affords easy accessibility to every activity--yet is priced moderately.

250 ROOMS WITH BATH SINGLE *from* $2.50

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EL COMODORO *Hotel*

DETROIT AFFORDS NO FINER HOTEL VALUE THAN THE

810 OUTSIDE ROOMS from $2 daily EACH WITH BATH AND SHOWER

BARLUM

CADILLAC SQUARE AT BATES STREET

Two of 4 refrigerated bodies, built of light, strong Alcoa Aluminum by Bode Finn, Inc., Cincinnati, for French Bauer, Inc. Mounted on 1-½ ton Dodge chassis. Weight: 1,900 lbs. Weight of previous body, built from heavy materials: 3,100 lbs.

In this case lightness was desired to make the load on the chassis less. By lightening the body 1,200 lbs., using light, strong alloys of Alcoa Aluminum in place of heavy materials, the operator can carry his usual load on a less expensive chassis. That's one way to save with the lightness of Aluminum.

More often the saving is turned into money by using Bonus Load, extra load which a truck can carry when its body is made light by constructing with light, strong Alcoa Aluminum. As dead-weight is discarded, Bonus Load can take its place. The exchange adds nothing to gross weight, hence does not increase operating expense. But as extra payload, Bonus Load does add to profits, soon paying the extra cost of the Aluminum body, then becoming net gain.

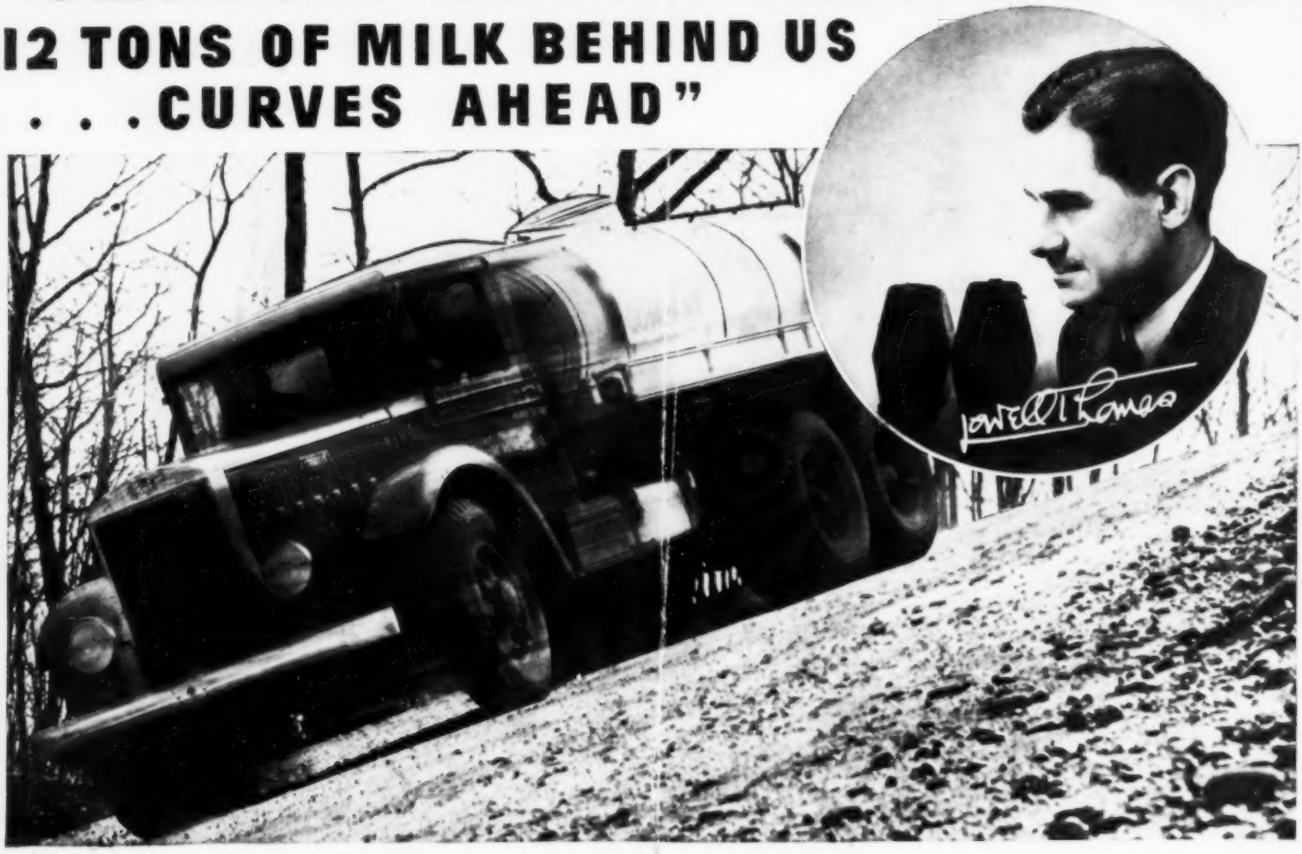
Another angle: maintenance of these bodies will be low, for it costs less to keep the finish attractive when the metal beneath the paint is non-rusting Aluminum.

You will want to look into the matter of light, economical bodies made of Alcoa Aluminum. May we send you the free handbook, "*Alcoa Aluminum for Truck Bodies?*" ALUMINUM COMPANY OF AMERICA, 2161 Gulf Building, Pittsburgh, Pa.

ALCOA · ALUMINUM

"SLIPPERY ROADS BENEATH US..

12 TONS OF MILK BEHIND US . . . CURVES AHEAD"



by Lowell Thomas

"We had just topped the brow of Deadman's Hill—not many miles from my farm in the Taconic Mountains. Down we started! A steep grade. A road slippery with mud. Sharp curves ahead.

"Here was one of the danger spots on that devil stretch through the mountains.

"I had visions of a skid. A blow-out. There were thrills at every curve. But to the driver, Larry Edwards, this mountain run is old stuff.

"He drives one of the 96 giant milk trucks owned by H. L. & F. McBride of Goshen, N. Y. They pound the highways night and day, seven days a week.

"On these runs a skid is mighty dangerous. A flat tire means an hour and a half lost. A blow-out . . . ?

"Tire trouble used to come often. Too often for safety. But, they tell me, with Goodrich Triple Protected Silvertowns, they've never had an accident caused by tires! Not one sidewall blow-out!

850,000 MILES A YEAR

"Later I talked to H. L. McBride. He said, 'Our trucks travel about 850,000 miles a year. Loads are heavy. The country is hilly. Many roads are high crowned. But tire trouble is practically a thing of the past. Our Goodrich Tires average better than 58,000 miles.'

"There's a hauling job of the hardest kind—and there's a tire record that speaks for itself."

* * *

Lowell Thomas, world traveler, adventurer and farmer, found a new thrill in visiting this big scale trucking operation. He heard an amazing story of tire performance. What's back of this record? Well, here are the facts.

Goodrich knows that 8 out of 10 premature truck tire failures are sidewall breaks. Goodrich decided to *do something* about it.

TIRES NOW TRIPLE PROTECTED

Engineers worked for months. Brought out a new invention—Triple Protection. Built into the sidewall, it keeps tires young. Lets 'em wear out S-L-O-W-L-Y instead of blowing out in a hurry.

Here are the three points of dollar-saving Triple Protection:

1. **PLYFLEX**—distributes stresses throughout the tire—prevents ply separation—checks local weakness.
2. **PLY-LOCK**—protects the tire from breaks caused by short plies tearing loose above the bead.
3. **100% FULL-FLOATING CORD**—eliminates cross cords from *all* plies—reduces heat in the tire 12%.

There's something for every trucker to think about. It means sure protection against unnecessary road delays. Goodbye to big repair bills. More mileage than ever built into a truck tire before.

For tire information see a Goodrich dealer or write The B. F. Goodrich Company, Akron, Ohio.

Goodrich *Triple Protected* **Silvertowns**

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES